

SEQUENCE LISTING

<110> Kukolj, George and Pause, Armin  
<120> SELF REPLICATING RNA MOLECULE FROM  
HEPATITIS C VIRUS  
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<140> To be assigned  
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<151> 2001-12-21  
<150> US 60/257,857  
<151> 2000-12-22  
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cc atg gac	cgg gag atg	gca gca tcg	tgc gga ggc	gct ttc gta	1847
Met Asp Arg	Glu Met Ala	Ala Ser Cys	Gly Gly Ala	Val Phe Val	
1	5	10	15		
ggt ctg ata ctc ttg acc ttg tca ccg cac tat aag	ctg ttc ctc gct				1895
Gly Leu Ile Leu Leu Thr Leu Ser Pro His Tyr Lys	Leu Phe Leu Ala				
20	25	30			
agg ctc ata tgg tgg tta caa tat ttt atc acc agg	gcc gag gca cac				1943
Arg Leu Ile Trp Trp Leu Gln Tyr Phe Ile Thr Arg	Ala Glu Ala His				
35	40	45			
ttg caa gtg tgg atc ccc ccc ctc aac gtt cgg	ggg ggc cgc gat gcc				1991
Leu Gln Val Trp Ile Pro Pro Leu Asn Val Arg	Gly Gly Arg Asp Ala				
50	55	60			
gtc atc ctc acg tgc gcg atc cac cca gag cta	atc ttt acc atc				2039
Val Ile Leu Leu Thr Cys Ala Ile His Pro Glu	Leu Ile Phe Thr Ile				
65	70	75			
acc aaa atc ttg ctc gcc ata ctc ggt cca ctc	atg gtg ctc cag gct				2087
Thr Lys Ile Leu Leu Ala Ile Leu Gly Pro Leu	Met Val Leu Gln Ala				
80	85	90	95		
ggt ata acc aaa gtg ccg tac ttc gtg	cgc gca cac ggg ctc att cgt				2135
Gly Ile Thr Lys Val Pro Tyr Phe Val Arg Ala	His Gly Leu Ile Arg				
100	105	110			
gca tgc atg ctg gtg cgg aag gtt gct	ggg ggt cat tat gtc	caa atg			2183
Ala Cys Met Leu Val Arg Lys Val Ala	Gly Gly His Tyr Val	Gln Met			
115	120	125			
gct ctc atg aag ttg gcc gca ctg aca ggt	acg tac gtt tat gac	cat			2231
Ala Leu Met Lys Leu Ala Ala	Leu Thr Gly Thr Tyr	Val Tyr Asp His			
130	135	140			
ctc acc cca ctg cgg gac tgg gcc cac gcg	ggc cta cga gac	ctt gcg			2279
Leu Thr Pro Leu Arg Asp Trp Ala His Ala	Gly Leu Arg Asp	Leu Ala			
145	150	155			
gtg gca gtt gag ccc gtc	gtc ttc tct gat atg	gag acc aag gtt	atc		2327
Val Ala Val Glu Pro Val Val Phe Ser Asp	Met Glu Thr Lys Val	Ile			
160	165	170	175		
acc tgg ggg gca gac acc gcg gct	tgt ggg gac atc	atc ttg ggc	ctg		2375
Thr Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp	Ile Ile Leu Gly	Leu			
180	185	185	190		

ccc gtc tcc gcc cgc agg ggg agg gag ata cat ctg gga ccg gca gac Pro Val Ser Ala Arg Arg Gly Arg Glu Ile His Leu Gly Pro Ala Asp	195                    200                    205	2423
agc ctt gaa ggg cag ggg tgg cga ctc ctc gcg cct att acg gcc tac Ser Leu Glu Gly Gln Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala Tyr	210                    215                    220	2471
tcc caa cag acg cga ggc cta ctt ggc tgc atc atc act agc ctc aca Ser Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr	225                    230                    235	2519
ggc cg <sup>g</sup> gac agg aac cag gtc gag ggg gag gtc caa gtg gtc tcc acc Gly Arg Asp Arg Asn Gln Val Glu Gly Glu Val Gln Val Val Ser Thr	240                    245                    250                    255	2567
gca aca caa tct ttc ctg gcg acc tgc gtc aat ggc gtg tgt tgg act Ala Thr Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys Trp Thr	260                    265                    270	2615
gtc tat cat ggt gcc ggc tca aag acc ctt gcc ggc cca aag ggc cca Val Tyr His Gly Ala Gly Ser Lys Thr Leu Ala Gly Pro Lys Gly Pro	275                    280                    285	2663
atc acc caa atg tac acc aat gtg gac cag gac ctc gtc ggc tgg caa Ile Thr Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly Trp Gln	290                    295                    300	2711
g <sup>c</sup> g ccc ccc ggg g <sup>c</sup> g cgt tcc ttg aca cca tgc acc tgc ggc agc tcg Ala Pro Pro Gly Ala Arg Ser Leu Thr Pro Cys Thr Cys Gly Ser Ser	305                    310                    315	2759
gac ctt tac ttg gtc acg agg cat gcc gat gtc att ccg gtg cgc cgg Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro Val Arg Arg	320                    325                    330                    335	2807
cgg ggc gac agc agg ggg agc cta ctc tcc ccc agg ccc gtc tcc tac Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Val Ser Tyr	340                    345                    350	2855
ttg aag ggc tct tcg ggc ggt cca ctg ctc tgc ccc tcg ggg cac gct Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ser Gly His Ala	355                    360                    365	2903
gtg ggc atc ttt cgg gct gcc gtg tgc acc cga ggg gtt gcg aag g <sup>c</sup> g Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys Ala	370                    375                    380	2951
gtg gac ttt gta ccc gtc gag tct atg gaa acc act atg cgg tcc ccg Val Asp Phe Val Pro Val Glu Ser Met Glu Thr Thr Met Arg Ser Pro	385                    390                    395	2999
gtc ttc acg gac aac tcg tcc cct ccg gcc gta ccg cag aca ttc cag Val Phe Thr Asp Asn Ser Ser Pro Pro Ala Val Pro Gln Thr Phe Gln		3047

400	405	410	415	
gtg gcc cat cta cac gcc cct act ggt agc ggc aag agc act aag gtg Val Ala His Leu His Ala Pro Thr Gly Ser Gly Lys Ser Thr Lys Val				3095
420		425		430
ccg gct gcg tat gca gcc caa ggg tat aag gtg ctt gtc ctg aac ccg Pro Ala Ala Tyr Ala Ala Gln Gly Tyr Lys Val Leu Val Leu Asn Pro				3143
435		440		445
tcc gtc gcc gcc acc cta ggt ttc ggg gcg tat atg tct aag gca cat Ser Val Ala Ala Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Ala His				3191
450		455		460
ggt atc gac cct aac atc aga acc ggg gta agg acc atc acc acg ggt Gly Ile Asp Pro Asn Ile Arg Thr Gly Val Arg Thr Ile Thr Thr Gly				3239
465		470		475
gcc ccc atc acg tac tcc acc tat ggc aag ttt ctt gcc gac ggt ggt Ala Pro Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly				3287
480		485		495
tgc tct ggg ggc gcc tat gac atc ata ata tgt gat gag tgc cac tca Cys Ser Gly Gly Ala Tyr Asp Ile Ile Cys Asp Glu Cys His Ser				3335
500		505		510
act gac tcg acc act atc ctg ggc atc ggc aca gtc ctg gac caa gcg Thr Asp Ser Thr Thr Ile Leu Gly Ile Gly Thr Val Leu Asp Gln Ala				3383
515		520		525
gag acg gct gga gcg cga ctc gtc gtg ctc gcc acc gct acg cct ccg Glu Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr Ala Thr Pro Pro				3431
530		535		540
gga tcg gtc acc gtg cca cat cca aac atc gag gag gtg gct ctg tcc Gly Ser Val Thr Val Pro His Pro Asn Ile Glu Glu Val Ala Leu Ser				3479
545		550		555
agc act gga gaa atc ccc ttt tat ggc aaa gcc atc ccc atc gag acc Ser Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Ile Glu Thr				3527
560		565		575
atc aag ggg ggg agg cac ctc att ttc tgc cat tcc aag aag aaa tgt Ile Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Cys				3575
580		585		590
gat gag ctc gcc gcg aag ctg tcc ggc ctc gga ctc aat gct gta gca Asp Glu Leu Ala Ala Lys Leu Ser Gly Leu Gly Leu Asn Ala Val Ala				3623
595		600		605
tat tac cgg ggc ctt gat gta tcc gtc ata cca act agc gga gac gtc Tyr Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp Val				3671
610		615		620
att gtc gta gca acg gac gct cta atg acg ggc ttt acc ggc gat ttc				3719

Ile Val Val Ala Thr Asp Ala Leu Met Thr Gly Phe Thr Gly Asp Phe			
625	630	635	
gac tca gtg atc gac tgc aat aca tgt gtc acc cag aca gtc gac ttc			3767
Asp Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe			
640	645	650	655
agc ctg gac ccg acc ttc acc att gag acg acg acc gtg cca caa gac			3815
Ser Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Val Pro Gln Asp			
660	665	670	
gcg gtg tca cgc tcg cag cgg cga ggc agg act ggt agg ggc agg atg			3863
Ala Val Ser Arg Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Met			
675	680	685	
ggc att tac agg ttt gtg act cca gga gaa cgg ccc tcg ggc atg ttc			3911
Gly Ile Tyr Arg Phe Val Thr Pro Gly Glu Arg Pro Ser Gly Met Phe			
690	695	700	
gat tcc tcg gtt ctg tgc gag tgc tat gac gcg ggc tgc gct tgg tac			3959
Asp Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr			
705	710	715	
gag ctc acg ccc gcc gag acc tca gtt agg ttg cgg gct tac cta aac			4007
Glu Leu Thr Pro Ala Glu Thr Ser Val Arg Leu Arg Ala Tyr Leu Asn			
720	725	730	735
aca cca ggg ttg ccc gtc tgc cag gac cat ctg gag ttc tgg gag agc			4055
Thr Pro Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Ser			
740	745	750	
gtc ttt aca ggc ctc acc cac ata gac gcc cat ttc ttg tcc cag act			4103
Val Phe Thr Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr			
755	760	765	
aag cag gca gga gac aac ttc ccc tac ctg gta gca tac cag gct acg			4151
Lys Gln Ala Gly Asp Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr			
770	775	780	
gtg tgc gcc agg gct cag gct cca cct cca tcg tgg gac caa atg tgg			4199
Val Cys Ala Arg Ala Gln Ala Pro Pro Ser Trp Asp Gln Met Trp			
785	790	795	
aag tgt ctc ata cgg cta aag cct acg ctg cac ggg cca acg ccc ctg			4247
Lys Cys Leu Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu			
800	805	810	815
ctg tat agg ctg gga gcc gtt caa aac gag gtt act acc aca cac ccc			4295
Leu Tyr Arg Leu Gly Ala Val Gln Asn Glu Val Thr Thr His Pro			
820	825	830	
ata acc aaa tac atc atg gca tgc atg tcg gct gac ctg gag gtc gtc			4343
Ile Thr Lys Tyr Ile Met Ala Cys Met Ser Ala Asp Leu Glu Val Val			
835	840	845	

acg agc acc tgg gtg ctg gta ggc gga gtc cta gca gct ctg gcc gcg		4391	
Thr Ser Thr Trp Val Leu Val Gly Gly Val Leu Ala Ala Leu Ala Ala			
850	855	860	
tat tgc ctg aca aca ggc agc gtg gtc att gtg ggc agg atc atc ttg		4439	
Tyr Cys Leu Thr Thr Gly Ser Val Val Ile Val Gly Arg Ile Ile Leu			
865	870	875	
tcc gga aag ccg gcc atc att ccc gac agg gaa gtc ctt tac cgg gag		4487	
Ser Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu Val Leu Tyr Arg Glu			
880	885	890	895
ttc gat gag atg gaa gag tgc gcc tca cac ctc cct tac atc gaa cag		4535	
Phe Asp Glu Met Glu Glu Cys Ala Ser His Leu Pro Tyr Ile Glu Gln			
900	905	910	
gga atg cag ctc gcc gaa caa ttc aaa cag aag gca atc ggg ttg ctg		4583	
Gly Met Gln Leu Ala Glu Gln Phe Lys Gln Lys Ala Ile Gly Leu Leu			
915	920	925	
caa aca gcc acc aag caa gcg gag gct gct ccc gtg gtg gaa tcc		4631	
Gln Thr Ala Thr Lys Gln Ala Glu Ala Ala Ala Pro Val Val Glu Ser			
930	935	940	
aag tgg cgg acc ctc gaa gcc ttc tgg gcg aag cat atg tgg aat ttc		4679	
Lys Trp Arg Thr Leu Glu Ala Phe Trp Ala Lys His Met Trp Asn Phe			
945	950	955	
atc agc ggg ata caa tat tta gca ggc ttg tcc act ctg cct ggc aac		4727	
Ile Ser Gly Ile Gln Tyr Leu Ala Gly Leu Ser Thr Leu Pro Gly Asn			
960	965	970	975
ccc gcg ata gca tca ctg atg gca ttc aca gcc tct atc acc agc ccg		4775	
Pro Ala Ile Ala Ser Leu Met Ala Phe Thr Ala Ser Ile Thr Ser Pro			
980	985	990	
ctc acc acc caa cat acc ctc ctg ttt aac atc ctg ggg gga tgg gtg		4823	
Leu Thr Thr Gln His Thr Leu Leu Phe Asn Ile Leu Gly Gly Trp Val			
995	1000	1005	
gcc gcc caa ctt gct cct ccc agc gct gct tct gct ttc gta ggc gcc		4871	
Ala Ala Gln Leu Ala Pro Pro Ser Ala Ala Ser Ala Phe Val Gly Ala			
1010	1015	1020	
ggc atc gct gga gcg gct gtt ggc agc ata ggc ctt ggg aag gtg ctt		4919	
Gly Ile Ala Gly Ala Ala Val Gly Ser Ile Gly Leu Gly Lys Val Leu			
1025	1030	1035	
gtg gat att ttg gca ggt tat gga gca ggg gtg gca ggc gcg ctc gtg		4967	
Val Asp Ile Leu Ala Gly Tyr Gly Ala Gly Val Ala Gly Ala Leu Val			
1040	1045	1050	1055
gcc ttt aag gtc atg agc ggc gag atg ccc tcc acc gag gac ctg gtt		5015	
Ala Phe Lys Val Met Ser Gly Glu Met Pro Ser Thr Glu Asp Leu Val			
1060	1065	1070	

aac cta ctc cct gct atc ctc tcc cct ggc gcc cta gtc gtc ggg gtc Asn Leu Leu Pro Ala Ile Leu Ser Pro Gly Ala Leu Val Val Gly Val 1075 1080 1085	5063
gtg tgc gca gcg ata ctg cgt cggt cac gtg ggc cca ggg gag ggg gct Val Cys Ala Ala Ile Leu Arg Arg His Val Gly Pro Gly Glu Gly Ala 1090 1095 1100	5111
gtg cag tgg atg aac cgg ctg ata gcg ttc gct tcg cgg ggt aac cac Val Gln Trp Met Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn His 1105 1110 1115	5159
gtc tcc ccc acg cac tat gtg cct gag agc gac gct gca gca cgt gtc Val Ser Pro Thr His Tyr Val Pro Glu Ser Asp Ala Ala Ala Arg Val 1120 1125 1130 1135	5207
act cag atc ctc tct agt ctt acc atc act cag ctg ctg aag agg ctt Thr Gln Ile Leu Ser Ser Leu Thr Ile Thr Gln Leu Leu Lys Arg Leu 1140 1145 1150	5255
cac cag tgg atc aac gag gac tgc tcc acg cca tgc tcc ggc tcg tgg His Gln Trp Ile Asn Glu Asp Cys Ser Thr Pro Cys Ser Gly Ser Trp 1155 1160 1165	5303
cta aga gat gtt tgg gat tgg ata tgc acg gtg ttg act gat ttc aag Leu Arg Asp Val Trp Asp Trp Ile Cys Thr Val Leu Thr Asp Phe Lys 1170 1175 1180	5351
acc tgg ctc cag tcc aag ctc ctg ccg cga ttg ccg gga gtc ccc ttc Thr Trp Leu Gln Ser Lys Leu Leu Pro Arg Leu Pro Gly Val Pro Phe 1185 1190 1195	5399
ttc tca tgt caa cgt ggg tac aag gga gtc tgg ccg ggc gac ggc atc Phe Ser Cys Gln Arg Gly Tyr Lys Gly Val Trp Arg Gly Asp Gly Ile 1200 1205 1210 1215	5447
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aac ggt tcc atg agg atc gtg ggg cct agg acc tgt agt aac acg tgg Asn Gly Ser Met Arg Ile Val Gly Pro Arg Thr Cys Ser Asn Thr Trp 1235 1240 1245	5543
cat gga aca ttc ccc att aac gcg tac acc acg ggc ccc tgc acg ccc His Gly Thr Phe Pro Ile Asn Ala Tyr Thr Gly Pro Cys Thr Pro 1250 1255 1260	5591
tcc ccg gcg cca aat tat tct agg gcg ctg tgg ccg gtg gct gct gag Ser Pro Ala Pro Asn Tyr Ser Arg Ala Leu Trp Arg Val Ala Ala Glu 1265 1270 1275	5639
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1280	1285	1290	1295	
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ttc ttc aca gaa gtg gat ggg gtg cggtt ccc cac agg tac gct cca gcg Phe Phe Thr Glu Val Asp Gly Val Arg Leu His Arg Tyr Ala Pro Ala 1315	1320		1325	5783
tgc aaa ccc ctc cta cgg gag gag gtc aca ttc ctg gtc ggg ctc aat Cys Lys Pro Leu Leu Arg Glu Val Thr Phe Leu Val Gly Leu Asn 1330	1335	1340		5831
caa tac ctg gtt ggg tca cag ctc cca tgc gag ccc gaa ccg gac gta Gln Tyr Leu Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Pro Asp Val 1345	1350	1355		5879
gca gtg ctc act tcc atg ctc acc gac ccc tcc cac att acg gcg gag Ala Val Leu Thr Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu 1360	1365	1370	1375	5927
acg gct aag cgt agg ctg gcc agg gga tct ccc ccc tcc ttg gcc agc Thr Ala Lys Arg Arg Leu Ala Arg Gly Ser Pro Pro Ser Leu Ala Ser 1380	1385		1390	5975
tca tca gct agc cag ctg tct gcg cct tcc ttg aag gca aca tgc act Ser Ser Ala Ser Gln Leu Ser Ala Pro Ser Leu Lys Ala Thr Cys Thr 1395	1400		1405	6023
acc cgt cat gac tcc ccg gac gct gac ctc atc gag gcc aac ctc ctg Thr Arg His Asp Ser Pro Asp Ala Asp Leu Ile Glu Ala Asn Leu Leu 1410	1415	1420		6071
tgg cgg cag gag atg ggc ggg aac atc acc cgc gtg gag tca gaa aat Trp Arg Gln Glu Met Gly Gly Asn Ile Thr Arg Val Glu Ser Glu Asn 1425	1430	1435		6119
aag gta gta att ttg gac tct ttc gag ccg ctc caa gcg gag gag gat Lys Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp 1440	1445	1450	1455	6167
gag agg gaa gta tcc gtt ccg gcg gag atc ctg cgg agg tcc agg aaa Glu Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys 1460	1465		1470	6215
ttc cct cga gcg atg ccc ata tgg gca cgc ccg gat tac aac cct cca Phe Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro 1475	1480		1485	6263
ctg tta gag tcc tgg aag gac ccg gac tac gtc cct cca gtg gta cac Leu Leu Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His 1490	1495	1500		6311
ggg tgt cca ttg ccg cct gcc aag gcc cct ccg ata cca cct cca cgg				6359

Gly Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Pro Ile Pro Pro Pro Arg						
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agg aag agg acg gtt gtc ctg tca gaa tct acc gtg tct tct gcc ttg						6407
Arg Lys Arg Thr Val Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu						
1520	1525	1530				1535
gcg gag ctc gcc aca aag acc ttc ggc agc tcc gaa tcg tcg gcc gtc						6455
Ala Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val						
1540	1545	1550				
gac agc ggc acg gca acg gcc tct cct gac cag ccc tcc gac gac ggc						6503
Asp Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly						
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gac gcg gga tcc gac gtt gag tcg tac tcc atg ccc ccc ctt gag						6551
Asp Ala Gly Ser Asp Val Glu Ser Tyr Ser Ser Met Pro Pro Leu Glu						
1570	1575	1580				
ggg gag ccg ggg gat ccc gat ctc agc gac ggg tct tgg tct acc gta						6599
Gly Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Ser Trp Ser Thr Val						
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agc gag gag gct agt gag gac gtc gtc tgc tcg atg tcc tac aca						6647
Ser Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr						
1600	1605	1610				1615
tgg aca ggc gcc ctg atc acg cca tgc gct gcg gag gaa acc aag ctg						6695
Trp Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu						
1620	1625	1630				
ccc atc aat gca ctg agc aac tct ttg ctc cgt cac cac aac ttg gtc						6743
Pro Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val						
1635	1640	1645				
tat gct aca aca tct cgc agc gca agc ctg cgg cag aag aag gtc acc						6791
Tyr Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr						
1650	1655	1660				
ttt gac aga ctg cag gtc ctg gac gac cac tac cgg gac gtg ctc aag						6839
Phe Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys						
1665	1670	1675				
gag atg aag gcg aag gcg tcc aca gtt aag gct aaa ctt cta tcc gtg						6887
Glu Met Lys Ala Lys Ala Ser Thr Val Lys Ala Lys Leu Leu Ser Val						
1680	1685	1690				1695
gag gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt						6935
Glu Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe						
1700	1705	1710				
ggc tat ggg gca aag gac gtc cgg aac cta tcc agc aag gcc gtt aac						6983
Gly Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn						
1715	1720	1725				

cac atc cgc tcc gtg tgg aag gac ttg ctg gaa gac act gag aca cca His Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro	7031
1730 1735 1740	
att gac acc acc atc atg gca aaa aat gag gtt ttc tgc gtc caa cca Ile Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro	7079
1745 1750 1755	
gag aag ggg ggc cgc aag cca gct cgc ctt atc gta ttc cca gat ttg Glu Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu	7127
1760 1765 1770 1775	
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1780 1785 1790	
ctc cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct Leu Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro	7223
1795 1800 1805	
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1810 1815 1820	
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1825 1830 1835	
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1840 1845 1850 1855	
gcc ccc gaa gcc aga cag gcc ata agg tcg ctc aca gag cgg ctt tac Ala Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr	7415
1860 1865 1870	
atc ggg ggc ccc ctg act aat tct aaa ggg cag aac tgc ggc tat cgc Ile Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg	7463
1875 1880 1885	
cgg tgc cgc gcg agc ggt gta ctg acg acc agc tgc ggt aat acc ctc Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu	7511
1890 1895 1900	
aca tgt tac ttg aag gcc gct gcg gcc tgt cga gct gcg aag ctc cag Thr Cys Tyr Leu Lys Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln	7559
1905 1910 1915	
gac tgc acg atg ctc gta tgc gga gac gac ctt gtc gtt atc tgt gaa Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu	7607
1920 1925 1930 1935	
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1940 1945 1950	

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tac gac ttg gag ttg ata aca tca tgc tcc tcc aat gtg tca gtc gcg Tyr Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser Asn Val Ser Val Ala 1970 1975 1980	7751
cac gat gca tct ggc aaa agg gtg tac tat ctc acc cgt gac ccc acc His Asp Ala Ser Gly Lys Arg Val Tyr Tyr Leu Thr Arg Asp Pro Thr 1985 1990 1995	7799
acc ccc ctt gcg cg <sup>g</sup> gct g <sup>g</sup> tgg gag aca gct aga cac act cca gtc Thr Pro Leu Ala Arg Ala Ala Trp Glu Thr Ala Arg His Thr Pro Val 2000 2005 2010 2015	7847
aat tcc tgg cta ggc aac atc atc atg tat g <sup>g</sup> ccc acc ttg tgg gca Asn Ser Trp Leu Gly Asn Ile Ile Met Tyr Ala Pro Thr Leu Trp Ala 2020 2025 2030	7895
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caa ctt gaa aaa gcc cta gat tgt cag atc tac ggg gcc tgt tac tcc Gln Leu Glu Lys Ala Leu Asp Cys Gln Ile Tyr Gly Ala Cys Tyr Ser 2050 2055 2060	7991
att gag cca ctt gac cta cct cag atc att caa cga ctc cac ggc ctt Ile Glu Pro Leu Asp Leu Pro Gln Ile Ile Gln Arg Leu His Gly Leu 2065 2070 2075	8039
agc gca ttt tca ctc cat agt tac tct cca ggt gag atc aat agg gtg Ser Ala Phe Ser Leu His Ser Tyr Ser Pro Gly Glu Ile Asn Arg Val 2080 2085 2090 2095	8087
gct tca tgc ctc agg aaa ctt ggg gta ccg ccc ttg cga gtc tgg aga Ala Ser Cys Leu Arg Lys Leu Gly Val Pro Pro Leu Arg Val Trp Arg 2100 2105 2110	8135
cat cgg gcc aga agt gtc cgc gct agg cta ctg tcc cag ggg ggg agg His Arg Ala Arg Ser Val Arg Ala Arg Leu Leu Ser Gln Gly Gly Arg 2115 2120 2125	8183
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ctc aaa ctc act cca atc ccg gct g <sup>g</sup> tcc cag ttg gat tta tcc agc Leu Lys Leu Thr Pro Ile Pro Ala Ala Ser Gln Leu Asp Leu Ser Ser 2145 2150 2155	8279
tgg ttc gtt gct ggt tac agc ggg gga gac ata tat cac agc ctg tct Trp Phe Val Ala Gly Tyr Ser Gly Gly Asp Ile Tyr His Ser Leu Ser	8327

2160	2165	2170	2175
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Arg Ala Arg Pro Arg Trp Phe Met Trp Cys Leu Leu Leu Ser Val
2180                      2185                      2190

ggg gta ggc atc tat cta ctc ccc aac cga tga acggggagct aaacactcca 8428
Gly Val Gly Ile Tyr Leu Leu Pro Asn Arg   *
2195                      2200

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c atg gac cgg gag atg	gca gca tcg	tgc gga ggc	gcf gtt ttc	gta ggt	1849
Met Asp Arg Glu Met Ala	Ala Ser Cys	Gly Gly Ala	Val Phe Val	Gly	
1	5	10	15		
ctg ata ctc ttg acc ttg	tca ccg cac tat	aag ctg ttc	ctc gct agg		1897
Leu Ile Leu Thr Leu Ser	Pro His Tyr Lys	Leu Phe Leu Ala	Arg		
20	25	30			
ctc ata tgg tgg tta caa	tat ttt atc acc	agg gcc gag	gca cac ttg		1945
Leu Ile Trp Trp Leu Gln	Tyr Phe Ile Thr	Arg Ala Glu	Ala His Leu		
35	40	45			
caa gtg tgg atc ccc ccc	ctc aac gtt cgg	ggg ggc cgc	gat gcc gtc		1993
Gln Val Trp Ile Pro Pro	Leu Asn Val Arg	Gly Gly Arg	Asp Ala Val		
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Ile Leu Leu Thr Cys Ala	Ile His Pro Glu	Leu Ile Phe	Thr Ile Thr		
65	70	75	80		
aaa atc ttg ctc gcc	ata ctc ggt cca	ctc atg gtg	ctc cag gct	ggt	2089
Lys Ile Leu Ala Ile	Leu Gly Pro	Leu Met Val	Leu Gln Ala	Gly	
85	90	95			
ata acc aaa gtg ccg	tac ttc gtg	cgf gca cac	ggg ctc att	cgt gca	2137
Ile Thr Lys Val Pro	Tyr Phe Val	Arg Ala His	Gly Leu Ile	Arg Ala	
100	105	110			
tgc atg ctg gtg	cgf aag gtt	gct ggg	ggt cat tat	gtc caa atg	2185
Cys Met Leu Val Arg	Lys Val Ala	Gly Gly His	Tyr Val Gln	Met Ala	
115	120	125			
ctc atg aag ttg	gcc gca ctg	aca ggt acg	tac gtt tat	gac cat ctc	2233
Leu Met Lys Leu Ala	Ala Leu Thr	Gly Thr Tyr	Val Tyr Asp	His Leu	
130	135	140			
acc cca ctg	cgf gac tgg	gcc cac	gcf ggc cta	cga gac ctt	2281
Thr Pro Leu Arg Asp	Trp Ala His	Ala Gly	Leu Arg Asp	Leu Ala Val	
145	150	155	160		
gca gtt gag ccc	gtc gtc ttc	tct gat atg	gag acc aag	gtt atc acc	2329
Ala Val Glu Pro	Val Val Phe	Ser Asp Met	Glu Thr Lys	Val Ile Thr	
165	170	175			
tgg ggg gca gac	acc gcg gcf	tgt ggg	gac atc atc	ttg ggc ctg	2377
Trp Gly Ala Asp	Thr Ala Ala	Cys Gly	Asp Ile Ile	Leu Gly Leu Pro	
180	185	190			

gtc tcc gcc cgc agg ggg agg gag ata cat ctg gga ccg gca gac agc Val Ser Ala Arg Arg Gly Arg Glu Ile His Leu Gly Pro Ala Asp Ser	195                    200                    205	2425
ctt gaa ggg cag ggg tgg cga ctc ctc gcg cct att acg gcc tac tcc Leu Glu Gly Gln Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala Tyr Ser	210                    215                    220	2473
caa cag acg cga ggc cta ctt ggc tgc atc atc act agc ctc aca ggc Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly	225                    230                    235                    240	2521
cgg gac agg aac cag gtc gag ggg gag gtc caa gtg gtc tcc acc gca Arg Asp Arg Asn Gln Val Glu Gly Glu Val Gln Val Val Ser Thr Ala	245                    250                    255	2569
aca caa tct ttc ctg gcg acc tgc gtc aat ggc gtg tgt tgg act gtc Thr Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys Trp Thr Val	260                    265                    270	2617
tat cat ggt gcc ggc tca aag acc ctt gcc ggc cca aag ggc cca atc Tyr His Gly Ala Gly Ser Lys Thr Leu Ala Gly Pro Lys Gly Pro Ile	275                    280                    285	2665
acc caa atg tac acc aat gtg gac cag gac ctc gtc ggc tgg caa gcg Thr Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly Trp Gln Ala	290                    295                    300	2713
ccc ccc ggg gcg cgt tcc ttg aca cca tgc acc tgc ggc agc tcg gac Pro Pro Gly Ala Arg Ser Leu Thr Pro Cys Thr Cys Gly Ser Ser Asp	305                    310                    315                    320	2761
ctt tac ttg gtc acg agg cat gcc gat gtc att ccg gtg cgc cgg cgg Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro Val Arg Arg Arg	325                    330                    335	2809
ggc gac agc agg ggg agc cta ctc tcc ccc agg ccc gtc tcc tac ttg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Val Ser Tyr Leu	340                    345                    350	2857
aag ggc tct tcg ggc ggt cca ctg ctc tgc ccc tcg ggg cac gct gtg Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ser Gly His Ala Val	355                    360                    365	2905
ggc atc ttt cgg gct gcc gtg tgc acc cga ggg gtt gcg aag gcg gtg Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys Ala Val	370                    375                    380	2953
gac ttt gta ccc gtc gag tct atg gaa acc act atg cgg tcc ccg gtc Asp Phe Val Pro Val Glu Ser Met Glu Thr Thr Met Arg Ser Pro Val	385                    390                    395                    400	3001
ttc acg gac aac tcg tcc cct ccg gcc gta ccg cag aca ttc cag gtg Phe Thr Asp Asn Ser Ser Pro Pro Ala Val Pro Gln Thr Phe Gln Val		3049

405	410	415	
gcc cat cta cac gcc cct act ggt agc ggc aag agc act aag gtg ccg Ala His Leu His Ala Pro Thr Gly Ser Gly Lys Ser Thr Lys Val Pro 420	425	430	3097
gct gcg tat gca gcc caa ggg tat aag gtg ctt gtc ctg aac ccg tcc Ala Ala Tyr Ala Ala Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser 435	440	445	3145
gtc gcc gcc acc cta ggt ttc ggg gcg tat atg tct aag gca cat ggt Val Ala Ala Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Ala His Gly 450	455	460	3193
atc gac cct aac atc aga acc ggg gta agg acc atc acc acg ggt gcc Ile Asp Pro Asn Ile Arg Thr Gly Val Arg Thr Ile Thr Thr Gly Ala 465	470	475	3241
ccc atc acg tac tcc acc tat ggc aag ttt ctt gcc gac ggt ggt tgc Pro Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly Cys 485	490	495	3289
tct ggg ggc gcc tat gac atc ata ata tgt gat gag tgc cac tca act Ser Gly Gly Ala Tyr Asp Ile Ile Cys Asp Glu Cys His Ser Thr 500	505	510	3337
gac tcg acc act atc ctg ggc atc ggc aca gtc ctg gac caa gcg gag Asp Ser Thr Thr Ile Leu Gly Ile Gly Thr Val Leu Asp Gln Ala Glu 515	520	525	3385
acg gct gga gcg cga ctc gtc gtg ctc gcc acc gct acg cct ccg gga Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr Ala Thr Pro Pro Gly 530	535	540	3433
tcg gtc acc gtg cca cat cca aac atc gag gag gtg gct ctg tcc agc Ser Val Thr Val Pro His Pro Asn Ile Glu Glu Val Ala Leu Ser Ser 545	550	555	3481
act gga gaa atc ccc ttt tat ggc aaa gcc atc ccc atc gag acc atc Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Ile Glu Thr Ile 565	570	575	3529
aag ggg ggg agg cac ctc att ttc tgc cat tcc aag aag aaa tgt gat Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp 580	585	590	3577
gag ctc gcc gcg aag ctg tcc ggc ctc gga ctc aat gct gta gca tat Glu Leu Ala Ala Lys Leu Ser Gly Leu Gly Leu Asn Ala Val Ala Tyr 595	600	605	3625
tac cggtt ggc ctt gat gta tcc gtc ata cca act agc gga gac gtc att Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp Val Ile 610	615	620	3673
gtc gta gca acg gac gct cta atg acg ggc ttt acc ggc gat ttc gac			3721

Val Val Ala Thr Asp Ala Leu Met Thr Gly Phe Thr Gly Asp Phe Asp			
625	630	635	640
tca gtg atc gac tgc aat aca tgt gtc acc cag aca gtc gac ttc agc			3769
Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser			
645	650	655	
ctg gac ccg acc ttc acc att gag acg acg acc gtg cca caa gac gcg			3817
Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Val Pro Gln Asp Ala			
660	665	670	
gtg tca cgc tcg cag cgg cga ggc agg act ggt agg ggc agg atg ggc			3865
Val Ser Arg Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Met Gly			
675	680	685	
att tac agg ttt gtg act cca gga gaa cgg ccc tcg ggc atg ttc gat			3913
Ile Tyr Arg Phe Val Thr Pro Gly Glu Arg Pro Ser Gly Met Phe Asp			
690	695	700	
tcc tcg gtt ctg tgc gag tgc tat gac gcg ggc tgt gct tgg tac gag			3961
Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu			
705	710	715	720
ctc acg ccc gcc gag acc tca gtt agg ttg cgg gct tac cta aac aca			4009
Leu Thr Pro Ala Glu Thr Ser Val Arg Leu Arg Ala Tyr Leu Asn Thr			
725	730	735	
cca ggg ttg ccc gtc tgc cag gac cat ctg gag ttc tgg gag agc gtc			4057
Pro Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Ser Val			
740	745	750	
ttt aca ggc ctc acc cac ata gac gcc cat ttc ttg tcc cag act aag			4105
Phe Thr Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys			
755	760	765	
cag gca gga gac aac ttc ccc tac ctg gta gca tac cag gct acg gtg			4153
Gln Ala Gly Asp Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val			
770	775	780	
tgc gcc agg gct cag gct cca cct cca tcg tgg gac caa atg tgg aag			4201
Cys Ala Arg Ala Gln Ala Pro Pro Pro Ser Trp Asp Gln Met Trp Lys			
785	790	795	800
tgt ctc ata cgg cta aag cct acg ctg cac ggg cca acg ccc ctg ctg			4249
Cys Leu Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu			
805	810	815	
tat agg ctg gga gcc gtt caa aac gag gtt act acc aca cac ccc ata			4297
Tyr Arg Leu Gly Ala Val Gln Asn Glu Val Thr Thr His Pro Ile			
820	825	830	
acc aaa tac atc atg gca tgc atg tcg gct gac ctg gag gtc gtc acg			4345
Thr Lys Tyr Ile Met Ala Cys Met Ser Ala Asp Leu Glu Val Val Thr			
835	840	845	

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Ser Thr Trp Val Leu Val Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr			
850	855	860	
tgc ctg aca aca ggc agc gtc att gtg ggc agg atc atc ttg tcc		4441	
Cys Leu Thr Thr Gly Ser Val Val Ile Val Gly Arg Ile Ile Leu Ser			
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gga arg ccg gcc atc att ccc gac agg gaa gtc ctt tac cgg gag ttc		4489	
Gly Xaa Pro Ala Ile Ile Pro Asp Arg Glu Val Leu Tyr Arg Glu Phe			
885	890	895	
gat gag atg gaa gag tgc gcc tca cac ctc cct tac atc gaa cag gga		4537	
Asp Glu Met Glu Glu Cys Ala Ser His Leu Pro Tyr Ile Glu Gln Gly			
900	905	910	
atg cag ctc gcc gaa caa ttc aaa cag aag gca atc ggg ttg ctg caa		4585	
Met Gln Leu Ala Glu Gln Phe Lys Gln Lys Ala Ile Gly Leu Leu Gln			
915	920	925	
aca gcc acc aag caa gcg gag gct gct ccc gtg gtg gaa tcc aag		4633	
Thr Ala Thr Lys Gln Ala Glu Ala Ala Ala Pro Val Val Glu Ser Lys			
930	935	940	
tgg cg acc ctc gaa gcc ttc tgg gcg aag cat atg tgg aat ttc atc		4681	
Trp Arg Thr Leu Glu Ala Phe Trp Ala Lys His Met Trp Asn Phe Ile			
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agc ggg ata caa tat tta gca ggc ttg tcc act ctg cct ggc aac ccc		4729	
Ser Gly Ile Gln Tyr Leu Ala Gly Leu Ser Thr Leu Pro Gly Asn Pro			
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gcg ata gca tca ctg atg gca ttc aca gcc tct atc acc agc ccg ctc		4777	
Ala Ile Ala Ser Leu Met Ala Phe Thr Ala Ser Ile Thr Ser Pro Leu			
980	985	990	
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Thr Thr Gln His Thr Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Ala			
995	1000	1005	
gcc caa ctt gct cct ccc agc gct gct tct gct ttc gta ggc gcc ggc		4873	
Ala Gln Leu Ala Pro Pro Ser Ala Ala Ser Ala Phe Val Gly Ala Gly			
1010	1015	1020	
atc gct gga gcg gct gtt ggc agc ata ggc ctt ggg aag gtg ctt gtg		4921	
Ile Ala Gly Ala Ala Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val			
1025	1030	1035	1040
gat att ttg gca ggt tat gga gca ggg gtg gca ggc gcg ctc gtg gcc		4969	
Asp Ile Leu Ala Gly Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala			
1045	1050	1055	
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Phe Lys Val Met Ser Gly Glu Met Pro Ser Thr Glu Asp Leu Val Asn			
1060	1065	1070	

cta ctc cct gct atc ctc tcc cct ggc gcc cta gtc gtc ggg gtc gtg Leu Leu Pro Ala Ile Leu Ser Pro Gly Ala Leu Val Val Gly Val Val	5065
1075 1080 1085	
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1090 1095 1100	
cag tgg atg aac cgg ctg ata gcg ttc gct tcg cgg ggt aac cac gtc Gln Trp Met Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val	5161
1105 1110 1115 1120	
tcc ccc acg cac tat gtg cct gag agc gac gct gca gca cgt gtc act Ser Pro Thr His Tyr Val Pro Glu Ser Asp Ala Ala Arg Val Thr	5209
1125 1130 1135	
cag atc ctc tct agt ctt acc atc act cag ctg ctg aag agg ctt cac Gln Ile Leu Ser Ser Leu Thr Ile Thr Gln Leu Leu Lys Arg Leu His	5257
1140 1145 1150	
cag tgg atc aac gag gac tgc tcc acg cca tgc tcc ggc tcg tgg cta Gln Trp Ile Asn Glu Asp Cys Ser Thr Pro Cys Ser Gly Ser Trp Leu	5305
1155 1160 1165	
aga gat gtt tgg gat tgg ata tgc acg gtg ttg act gat ttc aag acc Arg Asp Val Trp Asp Trp Ile Cys Thr Val Leu Thr Asp Phe Lys Thr	5353
1170 1175 1180	
tgg ctc cag tcc aag ctc ctg ccg cga ttg ccg gga gtc ccc ttc ttc Trp Leu Gln Ser Lys Leu Leu Pro Arg Leu Pro Gly Val Pro Phe Phe	5401
1185 1190 1195 1200	
tca tgt caa cgt ggg tac aag gga gtc tgg ccg ggc gac ggc atc atg Ser Cys Gln Arg Gly Tyr Lys Gly Val Trp Arg Gly Asp Gly Ile Met	5449
1205 1210 1215	
caa acc acc tgc cca tgt gga gca cag atc acc gga cat gtg aaa aac Gln Thr Thr Cys Pro Cys Gly Ala Gln Ile Thr Gly His Val Lys Asn	5497
1220 1225 1230	
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1235 1240 1245	
gga aca ttc ccc att aac gcg tac acc acg ggc ccc tgc acg ccc tcc Gly Thr Phe Pro Ile Asn Ala Tyr Thr Gly Pro Cys Thr Pro Ser	5593
1250 1255 1260	
ccg gcg cca aat tat tct agg gcg ctg tgg ccg gtg gct gct gag gag Pro Ala Pro Asn Tyr Ser Arg Ala Leu Trp Arg Val Ala Ala Glu Glu	5641
1265 1270 1275 1280	
tac gtg gag gtt acg cgg gtg ggg gat ttc cac tac gtg acg ggc atg Tyr Val Glu Val Thr Arg Val Gly Asp Phe His Tyr Val Thr Gly Met	5689

1285	1290	1295	
acc act gac aac gta aag tgc ccg tgt cag gtt ccg gcc ccc gaa ttc Thr Thr Asp Asn Val Lys Cys Pro Cys Gln Val Pro Ala Pro Glu Phe 1300	1305	1310	5737
ttc aca gaa gtg gat ggg gtg cggtt cag cac agg tac gct cca gcg tgc Phe Thr Glu Val Asp Gly Val Arg Leu His Arg Tyr Ala Pro Ala Cys 1315	1320	1325	5785
aaa ccc ctc cta cgg gag gag gtc aca ttc ctg gtc ggg ctc aat caa Lys Pro Leu Leu Arg Glu Val Thr Phe Leu Val Gly Leu Asn Gln 1330	1335	1340	5833
tac ctg gtt ggg tca cag ctc cca tgc gag ccc gaa ccg gac gta gca Tyr Leu Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Pro Asp Val Ala 1345	1350	1355	5881
gtg ctc act tcc atg ctc acc gac ccc tcc cac att acg gcg gag acg Val Leu Thr Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr 1365	1370	1375	5929
gct aag cgt agg ctg gcc agg gga tct ccc ccc tcc ttg gcc agc tca Ala Lys Arg Arg Leu Ala Arg Gly Ser Pro Pro Ser Leu Ala Ser Ser 1380	1385	1390	5977
tca gct agc cag ctg tct gcg cct tcc ttg aag gca aca tgc act acc Ser Ala Ser Gln Leu Ser Ala Pro Ser Leu Lys Ala Thr Cys Thr Thr 1395	1400	1405	6025
cgt cat gac tcc ccg gac gct gac ctc atc gag gcc aac ctc ctg tgg Arg His Asp Ser Pro Asp Ala Asp Leu Ile Glu Ala Asn Leu Leu Trp 1410	1415	1420	6073
cggtt cag gag atg ggc ggg aac atc acc cgc gtg gag tca gaa aat aag Arg Gln Glu Met Gly Gly Asn Ile Thr Arg Val Glu Ser Glu Asn Lys 1425	1430	1435	6121
gta gta att ttg gac tct ttc gag ccg ctc caa gcg gag gag gat gag Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp Glu 1445	1450	1455	6169
agg gaa gta tcc gtt ccg gcg gag atc ctg cgg agg tcc agg aaa ttc Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe 1460	1465	1470	6217
cct cga gcg atg ccc ata tgg gca cgc ccg gat tac aac cct cca ctg Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro Leu 1475	1480	1485	6265
ttr gag tcc tgg aag gac ccg gac tac gtc cct cca gtg gta cac ggg Xaa Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His Gly 1490	1495	1500	6313
tgt cca ttg ccg cct gcc aag gcc cct ccg ata cca cct cca ccg agg			6361

Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Ile Pro Pro Pro Arg Arg					
1505	1510	1515	1520		
aag agg acg gtt gtc ctg tca gaa tct acc gtg tct tct gcc ttg gcg	6409				
Lys Arg Thr Val Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu Ala					
1525	1530	1535			
gag ctc gcc aca aag acc ttc ggc agc tcc gaa tcg tcg gcc gtc gac	6457				
Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val Asp					
1540	1545	1550			
agc ggc acg gca acg gcc tct cct gac cag ccc tcc gac gac ggc gac	6505				
Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly Asp					
1555	1560	1565			
gcg gga tcc gac gtt gag tcg tac tcc tcc atg ccc ccc ctt gag ggg	6553				
Ala Gly Ser Asp Val Glu Ser Tyr Ser Ser Met Pro Pro Leu Glu Gly					
1570	1575	1580			
gag ccg ggg gat ccc gat ctc agc gac ggg tct tgg tct acc gta agc	6601				
Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Ser Trp Ser Thr Val Ser					
1585	1590	1595	1600		
gag gag gct agt gag gac gtc gtc tgc tcg atg tcc tac aca tgg	6649				
Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr Trp					
1605	1610	1615			
aca ggc gcc ctg atc acg cca tgc gct gcg gag gaa acc aag ctg ccc	6697				
Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu Pro					
1620	1625	1630			
atc aat gca ctg agc aac tct ttg ctc cgt cac cac aac ttg gtc tat	6745				
Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val Tyr					
1635	1640	1645			
gct aca aca tct cgc agc gca agc ctg cgg cag aag aag gtc acc ttt	6793				
Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr Phe					
1650	1655	1660			
gac aga ctg cag gtc ctg gac gac cac tac cgg gac gtg ctc aag gag	6841				
Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu					
1665	1670	1675	1680		
atg aag gcg aag gcg tcc aca gtt aag gct aaa ctt cta tcc gtg gag	6889				
Met Lys Ala Lys Ala Ser Thr Val Lys Ala Lys Leu Leu Ser Val Glu					
1685	1690	1695			
gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt ggc	6937				
Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly					
1700	1705	1710			
tat ggg gca aag gac gtc cgg aac cta tcc agc aag gcc gtt aac cac	6985				
Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His					
1715	1720	1725			

atc cgc tcc gtg tgg aag gac ttg ctg gaa gac act gag aca cca att Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro Ile	7033
1730 1735 1740	
gac acc acc atc atg gca aaa aat gag gtt ttc tgc gtc caa cca gag Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu	7081
1745 1750 1755 1760	
aag ggg ggc cgc aag cca gct cgc ctt atc gta ttc cca gat ttg ggg Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu Gly	7129
1765 1770 1775	
gtt cgt gtg tgc gag aaa atg gcc ctt tac gat gtg gtc tcc acc ctc Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu	7177
1780 1785 1790	
cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct gga Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly	7225
1795 1800 1805	
cag cgg gtc gag ttc ctg gtg aat gcc tgg aaa gcg aag aaa tgc cct Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro	7273
1810 1815 1820	
atg ggc ttc gca tat gac acc cgc tgt ttt gac tca acg gtc act gag Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu	7321
1825 1830 1835 1840	
aat gac atc cgt gtt gag gag tca atc tac caa tgt tgt gac ttg gcc Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala	7369
1845 1850 1855	
ccc gaa gcc aga cag gcc ata agg tcg ctc aca gag cgg ctt tac atc Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile	7417
1860 1865 1870	
ggg ggc ccc ctg act aat tct aaa ggg cag aac tgc ggc tat cgc cgg Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg	7465
1875 1880 1885	
tgc cgc gcg agc ggt gta ctg acg acc agc tgc ggt aat acc ctc aca Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr	7513
1890 1895 1900	
tgt tac ttg aag gcc gct gcg gcc tgt cga gct gcg aag ctc cag gac Cys Tyr Leu Lys Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp	7561
1905 1910 1915 1920	
tgc acg atg ctc gta tgc gga gac gac ctt gtc gtt atc tgt gaa agc Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser	7609
1925 1930 1935	
gcg ggg acc caa gag gac gag gcg agc cta cgg gcc ttc acg gag gct Ala Gly Thr Gln Glu Asp Glu Ala Ser Leu Arg Ala Phe Thr Glu Ala	7657
1940 1945 1950	

atg act aga tac tct gcc ccc cct ggg gac ccg ccc aaa cca gaa tac Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp Pro Pro Lys Pro Glu Tyr 1955 1960 1965	7705
gac ttg gag ttg ata aca tca tgc tcc tcc aat gtg tca gtc gcg cac Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser Asn Val Ser Val Ala His 1970 1975 1980	7753
gat gca tct ggc aaa agg gtg tac tat ctc acc cgt gac ccc acc acc Asp Ala Ser Gly Lys Arg Val Tyr Tyr Leu Thr Arg Asp Pro Thr Thr 1985 1990 1995 2000	7801
ccc ctt gcg cgg gct gcg tgg gag aca gct aga cac act cca gtc aat Pro Leu Ala Arg Ala Ala Trp Glu Thr Ala Arg His Thr Pro Val Asn 2005 2010 2015	7849
tcc tgg cta ggc aac atc atc atg tat gcg ccc acc ttg tgg gca agg Ser Trp Leu Gly Asn Ile Ile Met Tyr Ala Pro Thr Leu Trp Ala Arg 2020 2025 2030	7897
atg atc ctg atg act cat ttc ttc tcc atc ctt cta gct cag gaa caa Met Ile Leu Met Thr His Phe Phe Ser Ile Leu Leu Ala Gln Glu Gln 2035 2040 2045	7945
ctt gaa aaa gcc cta gat tgt cag atc tac ggg gcc tgt tac tcc att Leu Glu Lys Ala Leu Asp Cys Gln Ile Tyr Gly Ala Cys Tyr Ser Ile 2050 2055 2060	7993
gag cca ctt gac cta cct cag atc att caa cga ctc cac ggc ctt agc Glu Pro Leu Asp Leu Pro Gln Ile Ile Gln Arg Leu His Gly Leu Ser 2065 2070 2075 2080	8041
gca ttt tca ctc cat agt tac tct cca ggt gag atc aat agg gtg gct Ala Phe Ser Leu His Ser Tyr Ser Pro Gly Glu Ile Asn Arg Val Ala 2085 2090 2095	8089
tca tgc ctc agg aaa ctt ggg gta ccg ccc ttg cga gtc tgg aga cat Ser Cys Leu Arg Lys Leu Gly Val Pro Pro Leu Arg Val Trp Arg His 2100 2105 2110	8137
cgg gcc aga agt gtc cgc gct agg cta ctg tcc cag ggg ggg agg gct Arg Ala Arg Ser Val Arg Ala Arg Leu Leu Ser Gln Gly Gly Arg Ala 2115 2120 2125	8185
gcc act tgt ggc aag tac ctc aac tgg gca gta agg acc aag ctc Ala Thr Cys Gly Lys Tyr Leu Phe Asn Trp Ala Val Arg Thr Lys Leu 2130 2135 2140	8233
aaa ctc act cca atc ccg gct gcg tcc cag ttg gat tta tcc agc tgg Lys Leu Thr Pro Ile Pro Ala Ala Ser Gln Leu Asp Leu Ser Ser Trp 2145 2150 2155 2160	8281
ttc gtt gct ggt tac agc ggg gga gac ata tat cac agc ctg tct cgt Phe Val Ala Gly Tyr Ser Gly Gly Asp Ile Tyr His Ser Leu Ser Arg	8329

2165	2170	2175	
gcc cga ccc cgc tgg ttc atg tgg tgc cta ctc cta ctt tct gta ggg Ala Arg Pro Arg Trp Phe Met Trp Cys Leu Leu Leu Ser Val Gly 2180	2185	2190	8377
gta ggc atc tat cta ctc ccc aac cga tga acggggagct aaacactcca Val Gly Ile Tyr Leu Leu Pro Asn Arg * 2195	2200		8427
ggccaatagg ccatcctgtt tttttccct ttttttttt ttttttttc tttttttttt 8487 ttttttttt ttttttttc tcctttttt tcctctttt ttccctttct ttccctttggt 8547 ggctccatct tagccctagt cacggctagc tgtgaaaggt ccgtgagccg cttgactgca 8607 gagagtgcgtg atactggcct ctctgcagat caagt 8642			
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<222> 1489			
<223> Xaa is Leu			
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Leu Ile Leu Leu Thr Leu Ser Pro His Tyr Lys Leu Phe Leu Ala Arg			
20	25	30	
Leu Ile Trp Trp Leu Gln Tyr Phe Ile Thr Arg Ala Glu Ala His Leu			
35	40	45	
Gln Val Trp Ile Pro Pro Leu Asn Val Arg Gly Gly Arg Asp Ala Val			
50	55	60	
Ile Leu Leu Thr Cys Ala Ile His Pro Glu Leu Ile Phe Thr Ile Thr			
65	70	75	80
Lys Ile Leu Leu Ala Ile Leu Gly Pro Leu Met Val Leu Gln Ala Gly			
85	90	95	
Ile Thr Lys Val Pro Tyr Phe Val Arg Ala His Gly Leu Ile Arg Ala			
100	105	110	
Cys Met Leu Val Arg Lys Val Ala Gly Gly His Tyr Val Gln Met Ala			
115	120	125	
Leu Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His Leu			
130	135	140	
Thr Pro Leu Arg Asp Trp Ala His Ala Gly Leu Arg Asp Leu Ala Val			
145	150	155	160
Ala Val Glu Pro Val Val Phe Ser Asp Met Glu Thr Lys Val Ile Thr			
165	170	175	
Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Leu Gly Leu Pro			
180	185	190	
Val Ser Ala Arg Arg Gly Arg Glu Ile His Leu Gly Pro Ala Asp Ser			

195	200	205
Leu Glu Gly Gln Gly Trp Arg	Leu Leu Ala Pro Ile Thr Ala Tyr Ser	
210	215	220
Gln Gln Thr Arg Gly Leu	Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly	
225	230	235
Arg Asp Arg Asn Gln Val	Glu Gly Glu Val Gln Val Val Ser Thr Ala	240
245	250	255
Thr Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys Trp Thr Val		
260	265	270
Tyr His Gly Ala Gly Ser Lys	Thr Leu Ala Gly Pro Lys Gly Pro Ile	
275	280	285
Thr Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly Trp Gln Ala		
290	295	300
Pro Pro Gly Ala Arg Ser	Leu Thr Pro Cys Thr Cys Gly Ser Ser Asp	
305	310	315
Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro Val Arg Arg Arg		320
325	330	335
Gly Asp Ser Arg Gly Ser Leu Leu Ser	Pro Arg Pro Val Ser Tyr Leu	
340	345	350
Lys Gly Ser Ser Gly Gly Pro	Leu Leu Cys Pro Ser Gly His Ala Val	
355	360	365
Gly Ile Phe Arg Ala Ala Val	Cys Thr Arg Gly Val Ala Lys Ala Val	
370	375	380
Asp Phe Val Pro Val Glu Ser Met Glu Thr	Thr Met Arg Ser Pro Val	
385	390	395
Phe Thr Asp Asn Ser Ser Pro Pro Ala Val	Pro Gln Thr Phe Gln Val	
405	410	415
Ala His Leu His Ala Pro Thr Gly Ser	Gly Lys Ser Thr Lys Val Pro	
420	425	430
Ala Ala Tyr Ala Ala Gln Gly	Tyr Lys Val Leu Val Leu Asn Pro Ser	
435	440	445
Val Ala Ala Thr Leu Gly	Phe Gly Ala Tyr Met Ser Lys Ala His Gly	
450	455	460
Ile Asp Pro Asn Ile Arg	Thr Gly Val Arg Thr Ile Thr Thr Gly Ala	
465	470	475
Pro Ile Thr Tyr Ser Thr Tyr Gly Lys	Phe Leu Ala Asp Gly Gly Cys	
485	490	495
Ser Gly Gly Ala Tyr Asp Ile Ile	Ile Cys Asp Glu Cys His Ser Thr	
500	505	510
Asp Ser Thr Thr Ile Leu Gly	Ile Gly Thr Val Leu Asp Gln Ala Glu	
515	520	525
Thr Ala Gly Ala Arg Leu Val	Val Leu Ala Thr Ala Thr Pro Pro Gly	
530	535	540
Ser Val Thr Val Pro His	Pro Asn Ile Glu Glu Val Ala Leu Ser Ser	
545	550	555
Thr Gly Glu Ile Pro Phe	Tyr Gly Lys Ala Ile Pro Ile Glu Thr Ile	
565	570	575
Lys Gly Gly Arg His Leu Ile Phe	Cys His Ser Lys Lys Lys Cys Asp	
580	585	590
Glu Leu Ala Ala Lys Leu Ser	Gly Leu Gly Leu Asn Ala Val Ala Tyr	
595	600	605
Tyr Arg Gly Leu Asp Val	Ser Val Ile Pro Thr Ser Gly Asp Val Ile	
610	615	620
Val Val Ala Thr Asp Ala	Leu Met Thr Gly Phe Thr Gly Asp Phe Asp	
625	630	635
		640

Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser  
                   645                  650                  655  
 Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Thr Val Pro Gln Asp Ala  
                   660                  665                  670  
 Val Ser Arg Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Met Gly  
                   675                  680                  685  
 Ile Tyr Arg Phe Val Thr Pro Gly Glu Arg Pro Ser Gly Met Phe Asp  
                   690                  695                  700  
 Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu  
                   705                  710                  715                  720  
 Leu Thr Pro Ala Glu Thr Ser Val Arg Leu Arg Ala Tyr Leu Asn Thr  
                   725                  730                  735  
 Pro Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Ser Val  
                   740                  745                  750  
 Phe Thr Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys  
                   755                  760                  765  
 Gln Ala Gly Asp Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val  
                   770                  775                  780  
 Cys Ala Arg Ala Gln Ala Pro Pro Pro Ser Trp Asp Gln Met Trp Lys  
                   785                  790                  795                  800  
 Cys Leu Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu  
                   805                  810                  815  
 Tyr Arg Leu Gly Ala Val Gln Asn Glu Val Thr Thr Thr His Pro Ile  
                   820                  825                  830  
 Thr Lys Tyr Ile Met Ala Cys Met Ser Ala Asp Leu Glu Val Val Thr  
                   835                  840                  845  
 Ser Thr Trp Val Leu Val Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr  
                   850                  855                  860  
 Cys Leu Thr Thr Gly Ser Val Val Ile Val Gly Arg Ile Ile Leu Ser  
                   865                  870                  875                  880  
 Gly Xaa Pro Ala Ile Ile Pro Asp Arg Glu Val Leu Tyr Arg Glu Phe  
                   885                  890                  895  
 Asp Glu Met Glu Glu Cys Ala Ser His Leu Pro Tyr Ile Glu Gln Gly  
                   900                  905                  910  
 Met Gln Leu Ala Glu Gln Phe Lys Gln Lys Ala Ile Gly Leu Leu Gln  
                   915                  920                  925  
 Thr Ala Thr Lys Gln Ala Glu Ala Ala Ala Pro Val Val Glu Ser Lys  
                   930                  935                  940  
 Trp Arg Thr Leu Glu Ala Phe Trp Ala Lys His Met Trp Asn Phe Ile  
                   945                  950                  955                  960  
 Ser Gly Ile Gln Tyr Leu Ala Gly Leu Ser Thr Leu Pro Gly Asn Pro  
                   965                  970                  975  
 Ala Ile Ala Ser Leu Met Ala Phe Thr Ala Ser Ile Thr Ser Pro Leu  
                   980                  985                  990  
 Thr Thr Gln His Thr Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Ala  
                   995                  1000                  1005  
 Ala Gln Leu Ala Pro Pro Ser Ala Ala Ser Ala Phe Val Gly Ala Gly  
                   1010                  1015                  1020  
 Ile Ala Gly Ala Ala Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val  
                   1025                  1030                  1035                  1040  
 Asp Ile Leu Ala Gly Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala  
                   1045                  1050                  1055  
 Phe Lys Val Met Ser Gly Glu Met Pro Ser Thr Glu Asp Leu Val Asn  
                   1060                  1065                  1070  
 Leu Leu Pro Ala Ile Leu Ser Pro Gly Ala Leu Val Val Gly Val Val

1075	1080	1085
Cys Ala Ala Ile Leu Arg Arg His Val Gly Pro Gly Glu Gly Ala Val		
1090	1095	1100
Gln Trp Met Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val		
1105	1110	1115
Ser Pro Thr His Tyr Val Pro Glu Ser Asp Ala Ala Ala Arg Val Thr		
1125	1130	1135
Gln Ile Leu Ser Ser Leu Thr Ile Thr Gln Leu Leu Lys Arg Leu His		
1140	1145	1150
Gln Trp Ile Asn Glu Asp Cys Ser Thr Pro Cys Ser Gly Ser Trp Leu		
1155	1160	1165
Arg Asp Val Trp Asp Trp Ile Cys Thr Val Leu Thr Asp Phe Lys Thr		
1170	1175	1180
Trp Leu Gln Ser Lys Leu Leu Pro Arg Leu Pro Gly Val Pro Phe Phe		
1185	1190	1195
Ser Cys Gln Arg Gly Tyr Lys Gly Val Trp Arg Gly Asp Gly Ile Met		
1205	1210	1215
Gln Thr Thr Cys Pro Cys Gly Ala Gln Ile Thr Gly His Val Lys Asn		
1220	1225	1230
Cys Ser Met Arg Ile Val Gly Pro Arg Thr Cys Ser Asn Thr Trp His		
1235	1240	1245
Gly Thr Phe Pro Ile Asn Ala Tyr Thr Thr Gly Pro Cys Thr Pro Ser		
1250	1255	1260
Pro Ala Pro Asn Tyr Ser Arg Ala Leu Trp Arg Val Ala Ala Glu Glu		
1265	1270	1275
Tyr Val Glu Val Thr Arg Val Gly Asp Phe His Tyr Val Thr Gly Met		
1285	1290	1295
Thr Thr Asp Asn Val Lys Cys Pro Cys Gln Val Pro Ala Pro Glu Phe		
1300	1305	1310
Phe Thr Glu Val Asp Gly Val Arg Leu His Arg Tyr Ala Pro Ala Cys		
1315	1320	1325
Lys Pro Leu Leu Arg Glu Glu Val Thr Phe Leu Val Gly Leu Asn Gln		
1330	1335	1340
Tyr Leu Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Pro Asp Val Ala		
1345	1350	1355
Val Leu Thr Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr		
1365	1370	1375
Ala Lys Arg Arg Leu Ala Arg Gly Ser Pro Pro Ser Leu Ala Ser Ser		
1380	1385	1390
Ser Ala Ser Gln Leu Ser Ala Pro Ser Leu Lys Ala Thr Cys Thr Thr		
1395	1400	1405
Arg His Asp Ser Pro Asp Ala Asp Leu Ile Glu Ala Asn Leu Leu Trp		
1410	1415	1420
Arg Gln Glu Met Gly Gly Asn Ile Thr Arg Val Glu Ser Glu Asn Lys		
1425	1430	1435
Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp Glu		
1445	1450	1455
Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe		
1460	1465	1470
Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro Leu		
1475	1480	1485
Xaa Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His Gly		
1490	1495	1500
Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Ile Pro Pro Pro Arg Arg		
1505	1510	1515
		1520

Lys Arg Thr Val Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu Ala  
                   1525                  1530                  1535  
 Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val Asp  
                   1540                  1545                  1550  
 Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly Asp  
                   1555                  1560                  1565  
 Ala Gly Ser Asp Val Glu Ser Tyr Ser Ser Met Pro Pro Leu Glu Gly  
                   1570                  1575                  1580  
 Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Ser Trp Ser Thr Val Ser  
                   1585                  1590                  1595                  1600  
 Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr Trp  
                   1605                  1610                  1615  
 Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu Pro  
                   1620                  1625                  1630  
 Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val Tyr  
                   1635                  1640                  1645  
 Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr Phe  
                   1650                  1655                  1660  
 Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu  
                   1665                  1670                  1675                  1680  
 Met Lys Ala Lys Ala Ser Thr Val Lys Ala Lys Leu Leu Ser Val Glu  
                   1685                  1690                  1695  
 Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly  
                   1700                  1705                  1710  
 Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His  
                   1715                  1720                  1725  
 Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro Ile  
                   1730                  1735                  1740  
 Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu  
                   1745                  1750                  1755                  1760  
 Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu Gly  
                   1765                  1770                  1775  
 Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu  
                   1780                  1785                  1790  
 Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly  
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 Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro  
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 Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu  
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 Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala  
                   1845                  1850                  1855  
 Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile  
                   1860                  1865                  1870  
 Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg  
                   1875                  1880                  1885  
 Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr  
                   1890                  1895                  1900  
 Cys Tyr Leu Lys Ala Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp  
                   1905                  1910                  1915                  1920  
 Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser  
                   1925                  1930                  1935  
 Ala Gly Thr Gln Glu Asp Glu Ala Ser Leu Arg Ala Phe Thr Glu Ala  
                   1940                  1945                  1950  
 Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp Pro Pro Lys Pro Glu Tyr

1955	1960	1965
Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser Asn Val Ser Val Ala His		
1970	1975	1980
Asp Ala Ser Gly Lys Arg Val Tyr Tyr Leu Thr Arg Asp Pro Thr Thr		
1985	1990	1995
Pro Leu Ala Arg Ala Ala Trp Glu Thr Ala Arg His Thr Pro Val Asn		
2005	2010	2015
Ser Trp Leu Gly Asn Ile Ile Met Tyr Ala Pro Thr Leu Trp Ala Arg		
2020	2025	2030
Met Ile Leu Met Thr His Phe Phe Ser Ile Leu Leu Ala Gln Glu Gln		
2035	2040	2045
Leu Glu Lys Ala Leu Asp Cys Gln Ile Tyr Gly Ala Cys Tyr Ser Ile		
2050	2055	2060
Glu Pro Leu Asp Leu Pro Gln Ile Ile Gln Arg Leu His Gly Leu Ser		
2065	2070	2075
Ala Phe Ser Leu His Ser Tyr Ser Pro Gly Glu Ile Asn Arg Val Ala		
2085	2090	2095
Ser Cys Leu Arg Lys Leu Gly Val Pro Pro Leu Arg Val Trp Arg His		
2100	2105	2110
Arg Ala Arg Ser Val Arg Ala Arg Leu Leu Ser Gln Gly Gly Arg Ala		
2115	2120	2125
Ala Thr Cys Gly Lys Tyr Leu Phe Asn Trp Ala Val Arg Thr Lys Leu		
2130	2135	2140
Lys Leu Thr Pro Ile Pro Ala Ala Ser Gln Leu Asp Leu Ser Ser Trp		
2145	2150	2155
Phe Val Ala Gly Tyr Ser Gly Gly Asp Ile Tyr His Ser Leu Ser Arg		
2165	2170	2175
Ala Arg Pro Arg Trp Phe Met Trp Cys Leu Leu Leu Ser Val Gly		
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Val Gly Ile Tyr Leu Leu Pro Asn Arg		
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gacgaccggg tccttcttg gatcaacccg ctcaatgcct ggagatttg gcgtgcccc 240  
gcgagactgc tagccgagta gtgtgggtc gcgaaaaggcc ttgtggtaact gcctgataagg 300  
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cgacggcggt tccttgcgca gctgtgctcg acgttgcac tgaagcggga agggactggc 660  
tgctattggg cgaagtgcgg gggcaggatc tcctgtcatc tcaccttgct cctgcccaga 720

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c atg gac	cg g	atg gca	tcg tgc	gga ggc	gcf gtt ttc	1849
Met Asp Arg	Glu Met	Ala Ala Ser	Cys Gly	Gly Ala Val	Phe Val Gly	
1	5	10	15			
ctg ata ctc ttg acc ttg tca ccg cac tat aag ctg ttc ctc gct agg						1897
Leu Ile Leu Leu Thr Leu Ser Pro His Tyr Lys Leu Phe Leu Ala Arg						
20	25	30				
ctc ata tgg tgg tta caa tat ttt atc acc agg gcc gag gca cac ttg						1945
Leu Ile Trp Trp Leu Gln Tyr Phe Ile Thr Arg Ala Glu Ala His Leu						
35	40	45				
caa gtg tgg atc ccc ccc ctc aac gtt cgg ggg ggc cgc gat gcc gtc						1993
Gln Val Trp Ile Pro Pro Leu Asn Val Arg Gly Gly Arg Asp Ala Val						
50	55	60				
atc ctc ctc acg tgc gcg atc cac cca gag cta atc ttt acc atc acc						2041
Ile Leu Leu Thr Cys Ala Ile His Pro Glu Leu Ile Phe Thr Ile Thr						
65	70	75	80			
aaa atc ttg ctc gcc ata ctc ggt cca ctc atg gtg ctc cag gct ggt						2089
Lys Ile Leu Leu Ala Ile Leu Gly Pro Leu Met Val Leu Gln Ala Gly						
85	90	95				
ata acc aaa gtg ccg tac ttc gtg cgc gca cac ggg ctc att cgt gca						2137
Ile Thr Lys Val Pro Tyr Phe Val Arg Ala His Gly Leu Ile Arg Ala						
100	105	110				
tgc atg ctg gtg cgg aag gtt gct ggg ggt cat tat gtc caa atg gct						2185
Cys Met Leu Val Arg Lys Val Ala Gly Gly His Tyr Val Gln Met Ala						
115	120	125				
ctc atg aag ttg gcc gca ctg aca ggt acg tac gtt tat gac cat ctc						2233
Leu Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His Leu						
130	135	140				
acc cca ctg cgg gac tgg gcc cac gcg ggc cta cga gac ctt qcq qtg						2281

Thr Pro Leu Arg Asp Trp Ala His Ala Gly Leu Arg Asp Leu Ala Val			
145	150	155	160
gca gtt gag ccc gtc gtc ttc tct gat atg gag acc aag gtt atc acc			2329
Ala Val Glu Pro Val Val Phe Ser Asp Met Glu Thr Lys Val Ile Thr			
165	170	175	
tgg ggg gca gac acc gcg gcg tgg gac atc atc ttg ggc ctg ccc			2377
Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Leu Gly Leu Pro			
180	185	190	
gtc tcc gcc cgc agg ggg agg gag ata cat ctg gga ccg gca gac agc			2425
Val Ser Ala Arg Arg Gly Arg Glu Ile His Leu Gly Pro Ala Asp Ser			
195	200	205	
ctt gaa ggg cag ggg tgg cga ctc ctc gcg cct att acg gcc tac tcc			2473
Leu Glu Gly Gln Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala Tyr Ser			
210	215	220	
caa cag acg cga ggc cta ctt ggc tgc atc atc act agc ctc aca ggc			2521
Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly			
225	230	235	240
cgg gac agg aac cag gtc gag ggg gag gtc caa gtg gtc tcc acc gca			2569
Arg Asp Arg Asn Gln Val Glu Gly Glu Val Gln Val Val Ser Thr Ala			
245	250	255	
aca caa tct ttc ctg gcg acc tgc gtc aat ggc gtg tgt tgg act gtc			2617
Thr Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys Trp Thr Val			
260	265	270	
tat cat ggt gcc ggc tca aag acc ctt gcc ggc cca aag ggc cca atc			2665
Tyr His Gly Ala Gly Ser Lys Thr Leu Ala Gly Pro Lys Gly Pro Ile			
275	280	285	
acc caa atg tac acc aat gtg gac cag gac ctc gtc ggc tgg caa gcg			2713
Thr Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly Trp Gln Ala			
290	295	300	
ccc ccc ggg gcg cgt tcc ttg aca cca tgc acc tgc ggc agc tcg gac			2761
Pro Pro Gly Ala Arg Ser Leu Thr Pro Cys Thr Cys Gly Ser Ser Asp			
305	310	315	320
ctt tac ttg gtc acg aag cat gcc gat gtc att ccg gtg cgc cggtt			2809
Leu Tyr Leu Val Thr Lys His Ala Asp Val Ile Pro Val Arg Arg Arg			
325	330	335	
ggc gac agc agg ggg agc cta ctc tcc ccc cgg ccc gtc tcc tac ttg			2857
Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Val Ser Tyr Leu			
340	345	350	
aag ggc tct tcg ggc ggt cca ctg ctc tgc ccc tcg ggg cac gct gtg			2905
Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ser Gly His Ala Val			
355	360	365	

ggc atc ttt cgg gct gcc gtg tgc acc cga ggg gtt gcg aag gcg gtg Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys Ala Val	2953
370 375 380	
gac ttt gta ccc gtc gag tct atg gaa acc act atg cgg tcc ccg gtc Asp Phe Val Pro Val Glu Ser Met Glu Thr Thr Met Arg Ser Pro Val	3001
385 390 395 400	
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405 410 415	
gcc cat cta cac gcc cct act ggt agc ggc aag agc act aag gtg ccg Ala His Leu His Ala Pro Thr Gly Ser Gly Lys Ser Thr Lys Val Pro	3097
420 425 430	
gct gcg tat gca gcc caa ggg tat aag gtg ctt gtc ctg aac ccg tcc Ala Ala Tyr Ala Ala Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser	3145
435 440 445	
gtc gcc gcc acc cta ggt ttc ggg gcg tat atg tct aag gca cat ggt Val Ala Ala Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Ala His Gly	3193
450 455 460	
atc gac cct aac atc aga acc ggg gta agg acc atc acc acg ggt gcc Ile Asp Pro Asn Ile Arg Thr Gly Val Arg Thr Ile Thr Thr Gly Ala	3241
465 470 475 480	
ccc atc acg tac tcc acc tat ggc aag ttt ctt gcc gac ggt ggt tgc Pro Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly Cys	3289
485 490 495	
tct ggg ggc gcc tat gac atc ata ata tgt gat gag tgc cac tca act Ser Gly Gly Ala Tyr Asp Ile Ile Cys Asp Glu Cys His Ser Thr	3337
500 505 510	
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515 520 525	
acg gct gga gcg cga ctc gtc gtg ctc gcc acc gct acg cct ccg gga Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr Ala Thr Pro Pro Gly	3433
530 535 540	
tcg gtc acc gtg cca cat cca aac atc gag gag gtg gct ctg tcc agc Ser Val Thr Val Pro His Pro Asn Ile Glu Glu Val Ala Leu Ser Ser	3481
545 550 555 560	
act gga gaa atc ccc ttt tat ggc aaa gcc atc ccc atc gag acc atc Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Ile Glu Thr Ile	3529
565 570 575	
aag ggg ggg agg cac ctc att ttc tgc cat tcc aag aag aaa tgt gat Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp	3577
580 585 590	

gag ctc gcc gcg aag ctg tcc ggc ctc gga ctc aat gct gta gca tat			3625
Glu Leu Ala Ala Lys Leu Ser Gly Leu Gly Leu Asn Ala Val Ala Tyr			
595	600	605	
tac cgg ggc ctt gat gta tcc gtc ata cca act agc gga gac gtc att			3673
Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp Val Ile			
610	615	620	
gtc gta gca acg gac gct cta atg acg ggc ttt acc ggc gat ttc gac			3721
Val Val Ala Thr Asp Ala Leu Met Thr Gly Phe Thr Gly Asp Phe Asp			
625	630	635	640
tca gtg atc gac tgc aat aca tgt gtc acc cag aca gtc gac ttc agc			3769
Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser			
645	650	655	
ctg gac ccg acc ttc acc att gag acg acg acc gtg cca caa gac gcg			3817
Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Val Pro Gln Asp Ala			
660	665	670	
gtg tca cgc tcg cag cgg cga ggc agg act ggt agg ggc agg atg ggc			3865
Val Ser Arg Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Met Gly			
675	680	685	
att tac agg ttt gtg act cca gga gaa cgg ccc tcg ggc atg ttc gat			3913
Ile Tyr Arg Phe Val Thr Pro Gly Glu Arg Pro Ser Gly Met Phe Asp			
690	695	700	
tcc tcg gtt ctg tgc gag tgc tat gac gcg ggc tgt gct tgg tac gag			3961
Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu			
705	710	715	720
ctc acg ccc gcc gag acc tca gtt agg ttg cgg gct tac cta aac aca			4009
Leu Thr Pro Ala Glu Thr Ser Val Arg Leu Arg Ala Tyr Leu Asn Thr			
725	730	735	
cca ggg ttg ccc gtc tgc cag gac cat ctg gag ttc tgg gag ggc gtc			4057
Pro Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Gly Val			
740	745	750	
ttt aca ggc ctc acc cac ata gac gcc cat ttc ttg tcc cag act aag			4105
Phe Thr Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys			
755	760	765	
cag gca gga gac aac ttc ccc tac ctg gta gca tac cag gct acg gtg			4153
Gln Ala Gly Asp Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val			
770	775	780	
tgc gcc agg gct cag gct cca cct cca tcg tgg gac caa atg tgg aag			4201
Cys Ala Arg Ala Gln Ala Pro Pro Ser Trp Asp Gln Met Trp Lys			
785	790	795	800
tgt ctc ata cgg cta aag cct acg ctg cac ggg cca acg ccc ctg ctg			4249
Cys Leu Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu			

805	810	815	
tat agg ctg gga gcc gtt caa aac gag gtt act acc aca cac ccc ata Tyr Arg Leu Gly Ala Val Gln Asn Glu Val Thr Thr His Pro Ile 820	825	830	4297
acc aaa tac atc atg gca tgc atg tcg gct gac ctg gag gtc gtc acg Thr Lys Tyr Ile Met Ala Cys Met Ser Ala Asp Leu Glu Val Val Thr 835	840	845	4345
agc acc tgg gtg ctg gta ggc gga gtc cta gca gct ctg gcc gcg tat Ser Thr Trp Val Leu Val Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr 850	855	860	4393
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gat gag atg gaa gag tgc gcc tca cac ctc cct tac atc gaa cag gga Asp Glu Met Glu Glu Cys Ala Ser His Leu Pro Tyr Ile Glu Gln Gly 900	905	910	4537
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gcg ata gca tca ctg atg gca ttc aca gcc tct atc acc agc ccg ctc Ala Ile Ala Ser Leu Met Ala Phe Thr Ala Ser Ile Thr Ser Pro Leu 980	985	990	4777
acc acc caa cat acc ctc ctg ttt aac atc ctg ggg gga tgg gtg gcc Thr Thr Gln His Thr Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Ala 995	1000	1005	4825
gcc caa ctt gct cct ccc agc gct gct tcc gct ttc gta ggc gcc ggc Ala Gln Leu Ala Pro Pro Ser Ala Ala Ser Ala Phe Val Gly Ala Gly 1010	1015	1020	4873
atc gct gga gcg gct gtt ggc agc ata ggc ctt ggg aag gtg ctt gtg			4921

Ile Ala Gly Ala Ala Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val				
1025	1030	1035	1040	
gat att ttg gca ggt tat gga gca ggg gtg gca ggc gcg ctc gtg gcc				4969
Asp Ile Leu Ala Gly Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala				
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ttt aag gtc atg agc ggc gag atg ccc tcc acc gag gac ctg gtt aac				5017
Phe Lys Val Met Ser Gly Glu Met Pro Ser Thr Glu Asp Leu Val Asn				
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cta ctc cct atc ctc tcc cct ggc gcc cta gtc gtc ggg gtc gtg				5065
Leu Leu Pro Ala Ile Leu Ser Pro Gly Ala Leu Val Val Gly Val Val				
1075		1080		1085
tgc gca gcg ata ctg cgt cgg cac gtg ggc cca ggg gag ggg gct gtg				5113
Cys Ala Ala Ile Leu Arg Arg His Val Gly Pro Gly Glu Gly Ala Val				
1090		1095		1100
cag tgg atg aac cgg ctg ata gcg ttc gct tcg cgg ggt aac cac gtc				5161
Gln Trp Met Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val				
1105		1110		1115
tcc ccc acg cac tat gtg cct gag agc gac gct gca gca cgt gtc act				5209
Ser Pro Thr His Tyr Val Pro Glu Ser Asp Ala Ala Arg Val Thr				
1125		1130		1135
cag atc ctc tct agt ctt acc atc act cag ctg ctg aag agg ctt cac				5257
Gln Ile Leu Ser Ser Leu Thr Ile Thr Gln Leu Leu Lys Arg Leu His				
1140		1145		1150
cag tgg atc aac gag gac tgc tcc acg cca tgc tcc ggc tcg tgg cta				5305
Gln Trp Ile Asn Glu Asp Cys Ser Thr Pro Cys Ser Gly Ser Trp Leu				
1155		1160		1165
aga gat gtt tgg gat tgg ata tgc acg gtg ttg act gat ttc aag gcc				5353
Arg Asp Val Trp Asp Trp Ile Cys Thr Val Leu Thr Asp Phe Lys Ala				
1170		1175		1180
tgg ctc cag tcc aag ctc ctg ccg cga ttg ccg gga gtc ccc ttc ttc				5401
Trp Leu Gln Ser Lys Leu Leu Pro Arg Leu Pro Gly Val Pro Phe Phe				
1185		1190		1195
tca tgt caa cgt ggg tac aag gga gtc tgg ccg ggc gac ggc atc atg				5449
Ser Cys Gln Arg Gly Tyr Lys Gly Val Trp Arg Gly Asp Gly Ile Met				
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caa acc acc tgc cca tgt gga gca cag atc acc gga cat gtg aaa aac				5497
Gln Thr Thr Cys Pro Cys Gly Ala Gln Ile Thr Gly His Val Lys Asn				
1220		1225		1230
tgt tcc atg agg atc gtg ggg cct agg acc tgt agt aac acg tgg cat				5545
Cys Ser Met Arg Ile Val Gly Pro Arg Thr Cys Ser Asn Thr Trp His				
1235		1240		1245

gga aca ttc ccc att aac gcg tac acc acg ggc ccc tgc acg ccc tcc Gly Thr Phe Pro Ile Asn Ala Tyr Thr Thr Gly Pro Cys Thr Pro Ser	5593
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1265 1270 1275 1280	
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1330 1335 1340	
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1365 1370 1375	
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1380 1385 1390	
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1395 1400 1405	
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1410 1415 1420	
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1425 1430 1435 1440	
gta gta att ttg gac tct ttc gag ccg ctc caa gcg gag gag gat gag Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp Glu	6169
1445 1450 1455	
agg gaa gta tcc gtt ccg gcg gag atc ctg cgg agg tcc agg aaa ttc Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe	6217
1460 1465 1470	

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1635 1640 1645	
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1650 1655 1660	
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1665 1670 1675 1680	
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1685	1690	1695	
gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt ggc Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly 1700	1705	1710	6937
tat ggg gca aag gac gtc cg <sup>g</sup> aac cta tcc agc aag gcc gtt aac cac Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His 1715	1720	1725	6985
atc cgc tcc gtg tgg aag gac ttg ctg gaa gac act gag aca cca att Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro Ile 1730	1735	1740	7033
gac acc acc atc atg gca aaa aat gag gtt ttc tgc gtc caa cca gag Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu 1745	1750	1755	7081
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gtt cgt gtg tgc gag aaa atg gcc ctt tac gat gtg gtc tcc acc ctc Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu 1780	1785	1790	7177
cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct gga Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly 1795	1800	1805	7225
cag cgg gtc gag ttc ctg gtg aat gcc tgg aaa gcg aag aaa tgc cct Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro 1810	1815	1820	7273
atg ggc ttc gca tat gac acc cgc tgt ttt gac tca acg gtc act gag Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu 1825	1830	1835	7321
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ccc gaa gcc aga cag gcc ata agg tcg ctc aca gag cgg ctt tac atc Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile 1860	1865	1870	7417
ggg ggc ccc ctg act aat tct aaa ggg cag aac tgc ggc tat cgc cgg Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg 1875	1880	1885	7465
tgc cgc gcg agc ggt gta ctg acg acc agc tgc ggt aat acc ctc aca Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr 1890	1895	1900	7513
tgt tac ttg aag gcc gct gcg gcc tgt cga gct gcg aag ctc cag gac			7561

Cys	Tyr	Leu	Lys	Ala	Ala	Ala	Ala	Cys	Arg	Ala	Ala	Lys	Leu	Gln	Asp		
1905				1910				1915				1920					
tgc	acg	atg	ctc	gta	tgc	gga	gac	gac	ctt	gtc	gtt	atc	tgt	gaa	agc	7609	
Cys	Thr	Met	Leu	Val	Cys	Gly	Asp	Asp	Leu	Val	Val	Ile	Cys	Glu	Ser		
															1935		
1925									1930								
gcg	ggg	acc	caa	gag	gac	gag	gag	gac	cta	cg	gcc	ttc	acg	gag	gct	7657	
Ala	Gly	Thr	Gln	Glu	Asp	Glu	Asp	Glu	Ala	Ser	Leu	Arg	Ala	Phe	Thr	Glu	Ala
									1940			1945			1950		
1940																	
atg	act	aga	tac	tct	gcc	ccc	cct	ggg	gac	ccg	ccc	aaa	cca	gaa	tac	7705	
Met	Thr	Arg	Tyr	Ser	Ala	Pro	Pro	Gly	Asp	Pro	Pro	Lys	Pro	Glu	Tyr		
									1955		1960		1965				
1955																	
gac	ttg	gag	ttg	ata	aca	tca	tgc	tcc	tcc	aat	gtg	tca	gtc	gcg	cac	7753	
Asp	Leu	Glu	Leu	Ile	Thr	Ser	Cys	Ser	Ser	Asn	Val	Ser	Val	Ala	His		
									1970		1975		1980				
1970																	
gat	gca	tct	ggc	aaa	agg	gtg	tac	tat	ctc	acc	cgt	gac	ccc	acc	acc	7801	
Asp	Ala	Ser	Gly	Lys	Arg	Val	Tyr	Tyr	Leu	Thr	Arg	Asp	Pro	Thr	Thr		
									1985		1990		1995		2000		
1985																	
ccc	ctt	gcf	cgf	gct	gcf	tgg	gag	aca	gct	aga	cac	act	cca	gtc	aat	7849	
Pro	Leu	Ala	Arg	Ala	Ala	Trp	Glu	Thr	Ala	Arg	His	Thr	Pro	Val	Asn		
									2005		2010		2015				
2005																	
tcc	tgg	cta	ggc	aac	atc	atc	atc	atg	tat	gcf	ccc	acc	ttg	tgg	gca	agg	7897
Ser	Trp	Leu	Gly	Asn	Ile	Ile	Met	Tyr	Ala	Pro	Thr	Leu	Trp	Ala	Arg		
									2020		2025		2030				
2020																	
atg	atc	ctg	atg	act	cat	tcc	tcc	atc	ctt	cta	gct	cag	gaa	caa		7945	
Met	Ile	Leu	Met	Thr	His	Phe	Phe	Ser	Ile	Leu	Leu	Ala	Gln	Glu	Gln		
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2035																	
ctt	gaa	aaa	gcc	cta	gat	tgt	cag	atc	tac	ggg	gcc	tgt	tac	tcc	att	7993	
Leu	Glu	Lys	Ala	Leu	Asp	Cys	Gln	Ile	Tyr	Gly	Ala	Cys	Tyr	Ser	Ile		
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2050																	
gag	cca	ctt	gac	cta	cct	cag	atc	att	caa	cga	ctc	cac	ggc	ctt	agc	8041	
Glu	Pro	Leu	Asp	Leu	Pro	Gln	Ile	Ile	Gln	Arg	Leu	His	Gly	Leu	Ser		
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gca	ttt	tca	ctc	cat	agt	tac	tct	cca	ggt	gag	atc	aat	agg	gtg	gct	8089	
Ala	Phe	Ser	Leu	His	Ser	Tyr	Ser	Pro	Gly	Glu	Ile	Asn	Arg	Val	Ala		
									2085		2090		2095				
2085																	
tca	tgc	ctc	agg	aaa	ctt	ggg	gta	ccg	ccc	ttg	cga	gtc	tgg	aga	cat	8137	
Ser	Cys	Leu	Arg	Lys	Leu	Gly	Val	Pro	Pro	Leu	Arg	Val	Trp	Arg	His		
									2100		2105		2110				
2100																	
cgg	gcc	aga	agt	gtc	cgc	gct	agg	cta	ctg	tcc	cag	ggg	ggg	agg	gct	8185	
Arg	Ala	Arg	Ser	Val	Arg	Ala	Arg	Leu	Leu	Ser	Gln	Gly	Gly	Arg	Ala		
									2115		2120		2125				
2115																	

gcc act tgt ggc aag tac ctc ttc aac tgg gca gta agg acc aag ctc	8233
Ala Thr Cys Gly Lys Tyr Leu Phe Asn Trp Ala Val Arg Thr Lys Leu	
2130 2135 2140	
aaa ctc act cca atc ccg gct gcg tcc cag ttg gat tta tcc agc tgg	8281
Lys Leu Thr Pro Ile Pro Ala Ala Ser Gln Leu Asp Leu Ser Ser Trp	
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ttc gtt gct ggt tac agc ggg gga gac ata tat cac agc ctg tct cgt	8329
Phe Val Ala Gly Tyr Ser Gly Gly Asp Ile Tyr His Ser Leu Ser Arg	
2165 2170 2175	
gcc cga ccc cgc tgg ttc atg tgg tgc cta ctc cta ctt tct gta ggg	8377
Ala Arg Pro Arg Trp Phe Met Trp Cys Leu Leu Leu Ser Val Gly	
2180 2185 2190	
gta ggc atc tat cta ctc ccc aac cga tga acggggagct aaacactcca	8427
Val Gly Ile Tyr Leu Leu Pro Asn Arg *	
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 1 5 10 15

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ata acc aaa gtg ccg tac ttc gtg cgc gca cac ggg ctc att cgt gca 2137  
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tgc atg ctg gtg cgg aag gtt gct ggg ggt cat tat gtc caa atg gct 2185  
 Cys Met Leu Val Arg Lys Val Ala Gly Gly His Tyr Val Gln Met Ala  
 115 120 125

ctc atg aag ttg gcc gca ctg aca ggt acg tac gtt tat gac cat ctc 2233  
 Leu Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His Leu  
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acc cca ctg cgg gac tgg gcc cac gcg ggc cta cga gac ctt gcg gtg 2281  
 Thr Pro Leu Arg Asp Trp Ala His Ala Gly Leu Arg Asp Leu Ala Val  
 145 150 155 160

gca gtt gag ccc gtc gtc ttc tct gat atg gag acc aag gtt atc acc 2329  
 Ala Val Glu Pro Val Val Phe Ser Asp Met Glu Thr Lys Val Ile Thr  
 165 170 175

tgg ggg gca gac acc gcg gcg tgt ggg gac atc atc ttg ggc ctg ccc 2377

Trp	Gly	Ala	Asp	Thr	Ala	Ala	Cys	Gly	Asp	Ile	Ile	Leu	Gly	Leu	Pro	
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Val	Ser	Ala	Arg	Arg	Gly	Arg	Glu	Ile	His	Leu	Gly	Pro	Ala	Asp	Ser	
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Leu	Glu	Gly	Gln	Gly	Trp	Arg	Leu	Leu	Ala	Pro	Ile	Thr	Ala	Tyr	Ser	
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Gln	Gln	Thr	Arg	Gly	Leu	Leu	Gly	Cys	Ile	Ile	Thr	Ser	Leu	Thr	Gly	
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Arg	Asp	Arg	Asn	Gln	Val	Glu	Gly	Glu	Val	Gln	Val	Val	Ser	Thr	Ala	
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Thr	Gln	Ser	Phe	Leu	Ala	Thr	Cys	Val	Asn	Gly	Val	Cys	Trp	Thr	Val	
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tat	cat	ggt	gcc	ggc	tca	aag	acc	ctt	gcc	ggc	cca	aag	ggc	cca	atc	2665
Tyr	His	Gly	Ala	Gly	Ser	Lys	Thr	Leu	Ala	Gly	Pro	Lys	Gly	Pro	Ile	
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acc	caa	atg	tac	acc	aat	gtg	gac	cag	gac	ctc	gtc	ggc	tgg	caa	gcg	2713
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ccc	ccc	ggg	gcf	cgt	tcc	ttg	aca	cca	tgc	acc	tgc	ggc	agc	tcg	gac	2761
Pro	Pro	Gly	Ala	Arg	Ser	Leu	Thr	Pro	Cys	Thr	Cys	Gly	Ser	Ser	Asp	
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Gly	Asp	Ser	Arg	Gly	Ser	Leu	Leu	Ser	Pro	Arg	Pro	Val	Ser	Tyr	Leu	
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Lys	Gly	Ser	Ser	Gly	Gly	Pro	Leu	Leu	Cys	Pro	Ser	Gly	His	Ala	Val	
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Asp	Phe	Val	Pro	Val	Glu	Ser	Met	Gly	Thr	Thr	Met	Arg	Ser	Pro	Val	
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gtc gcc gcc acc cta ggt ttc ggg gcg tat atg tct aag gca cat ggt Val Ala Ala Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Ala His Gly 450 455 460	3193
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gag ctc gcc gcg aag ctg tcc ggc ctc gga ctc aat gct gta gca tat Glu Leu Ala Ala Lys Leu Ser Gly Leu Gly Leu Asn Ala Val Ala Tyr 595 600 605	3625
tac cggtt gat gta tcc gtc ata cca act agc gga gac gtc att Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp Val Ile 610 615 620	3673

gtc gta gca acg gac gct cta atg acg ggc ttt acc ggc gat ttc gac Val Val Ala Thr Asp Ala Leu Met Thr Gly Phe Thr Gly Asp Phe Asp 625 630 635 640	3721
tca gtg atc gac tgc aat aca tgt gtc acc cag aca gtc gac ttc agc Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser 645 650 655	3769
ctg gac ccg acc ttc acc att gag acg acg acc gtg cca caa gac gcg Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Val Pro Gln Asp Ala 660 665 670	3817
gtg tca cgc tcg cag cgg cga ggc agg act ggt agg ggc agg atg ggc Val Ser Arg Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Met Gly 675 680 685	3865
att tac agg ttt gtg act cca gga gaa cgg ccc tcg ggc atg ttc gat Ile Tyr Arg Phe Val Thr Pro Gly Glu Arg Pro Ser Gly Met Phe Asp 690 695 700	3913
tcc tcg gtt ctg tgc gag tgc tat gac gcg ggc tgt gct tgg tac gag Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu 705 710 715 720	3961
ctc acg ccc gcc gag acc tca gtt agg ttg cgg gct tac cta aac aca Leu Thr Pro Ala Glu Thr Ser Val Arg Leu Arg Ala Tyr Leu Asn Thr 725 730 735	4009
cca ggg ttg ccc gtc tgc cag gac cat ctg gag ttc tgg gag agc gtc Pro Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Ser Val 740 745 750	4057
ttt aca ggc ctc acc cac ata gac gcc cat ttc ttg tcc cag act aag Phe Thr Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys 755 760 765	4105
cag gca gga gac aac ttc ccc tac ctg gta gca tac cag gct acg gtg Gln Ala Gly Asp Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val 770 775 780	4153
tgc gcc agg gct cag gct cca cct cca tcg tgg gac caa atg tgg aag Cys Ala Arg Ala Gln Ala Pro Pro Pro Ser Trp Asp Gln Met Trp Lys 785 790 795 800	4201
tgt ctc ata cgg cta aag cct acg ctg cac ggg cca acg ccc ctg ctg Cys Leu Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu 805 810 815	4249
tat agg ctg gga gcc gtt caa aac gag gtt act acc aca cac ccc ata Tyr Arg Leu Gly Ala Val Gln Asn Glu Val Thr Thr His Pro Ile 820 825 830	4297
acc aaa tac atc atg gca tgc atg tcg gct gac ctg gag gtc gtc acg Thr Lys Tyr Ile Met Ala Cys Met Ser Ala Asp Leu Glu Val Val Thr	4345

835	840	845	
agc acc tgg gtc ctg gta ggc gga gtc cta gca gct ctg gcc gcg tat Ser Thr Trp Val Leu Val Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr 850	855	860	4393
tgc ctg aca aca ggc agc gtc att gtg ggc agg atc atc ttg tcc Cys Leu Thr Thr Gly Ser Val Val Ile Val Gly Arg Ile Ile Leu Ser 865	870	875	4441
gga aag ccg gcc atc att ccc gac agg gaa gtc ctt tac cg <sup>g</sup> gag ttc Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu Val Leu Tyr Arg Glu Phe 885	890	895	4489
gat gag atg gaa gag tgc gcc tca cac ctc cct tac atc gaa cag gga Asp Glu Met Glu Glu Cys Ala Ser His Leu Pro Tyr Ile Glu Gln Gly 900	905	910	4537
atg cag ctc gcc gaa caa ttc aaa cag aag gca atc ggg ttg ctg caa Met Gln Leu Ala Glu Gln Phe Lys Gln Lys Ala Ile Gly Leu Leu Gln 915	920	925	4585
aca gcc acc aag caa gcg gag gct gct ccc gtg gaa tcc aag Thr Ala Thr Lys Gln Ala Glu Ala Ala Pro Val Val Glu Ser Lys 930	935	940	4633
tgg cgg acc ctc gaa gcc ttc tgg gcg aag cat atg tgg aat ttc atc Trp Arg Thr Leu Glu Ala Phe Trp Ala Lys His Met Trp Asn Phe Ile 945	950	955	4681
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gcg ata gca tca ctg atg gca ttc aca gcc tct atc acc agc ccg ctc Ala Ile Ala Ser Leu Met Ala Phe Thr Ala Ser Ile Thr Ser Pro Leu 980	985	990	4777
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gcc caa ctt gct cct ccc agc gct gct tct gct ttc gta ggc gcc ggc Ala Gln Leu Ala Pro Pro Ser Ala Ala Ser Ala Phe Val Gly Ala Gly 1010	1015	1020	4873
atc gct gga gcg gct gtt ggc agc ata ggc ctt ggg aag gtg ctt gtg Ile Ala Gly Ala Ala Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val 1025	1030	1035	4921
gat att ttg gca ggt tat gga gca ggg gtc gca ggc gcg ctc gtg gcc Asp Ile Leu Ala Gly Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala 1045	1050	1055	4969
ttt aag gtc atg agc ggc gag atg ccc tcc acc gag gac ctg gtt aac			5017

Phe Lys Val Met Ser Gly Glu Met Pro Ser Thr Glu Asp Leu Val Asn			
1060	1065	1070	
ctc ctc cct atc ctc tcc cct ggc gcc cta gtc gtc ggg gtc gtg	5065		
Leu Leu Pro Ala Ile Leu Ser Pro Gly Ala Leu Val Val Gly Val Val			
1075	1080	1085	
tgc gca gcg ata ctg cgt cgg cac gtg ggc cca ggg gag ggg gct gtg	5113		
Cys Ala Ala Ile Leu Arg Arg His Val Gly Pro Gly Glu Gly Ala Val			
1090	1095	1100	
cag tgg atg aac cgg ctg ata gcg ttc gct tcg cgg ggt aac cac gtc	5161		
Gln Trp Met Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val			
1105	1110	1115	1120
tcc ccc acg cac tat gtg cct gag agc gac gct gca gca cgt gtc act	5209		
Ser Pro Thr His Tyr Val Pro Glu Ser Asp Ala Ala Arg Val Thr			
1125	1130	1135	
cag atc ctc tct agt ctt acc atc act cag ctg ctg aag agg ctt cac	5257		
Gln Ile Leu Ser Ser Leu Thr Ile Thr Gln Leu Leu Lys Arg Leu His			
1140	1145	1150	
cag tgg atc aac gag gac tgc tcc acg cca tgc tcc ggc tcg tgg cta	5305		
Gln Trp Ile Asn Glu Asp Cys Ser Thr Pro Cys Ser Gly Ser Trp Leu			
1155	1160	1165	
aga gat gtt tgg gat tgg gta tgc acg gtg ttg act gat ttc aag acc	5353		
Arg Asp Val Trp Asp Trp Val Cys Thr Val Leu Thr Asp Phe Lys Thr			
1170	1175	1180	
tgg ctc cag tcc aag ctc ctg ccg cga ttg ccg gga gtc ccc ttc ttc	5401		
Trp Leu Gln Ser Lys Leu Leu Pro Arg Leu Pro Gly Val Pro Phe Phe			
1185	1190	1195	1200
tca tgt caa cgt ggg tac aag gga gtc tgg cgg ggc gac ggc atc atg	5449		
Ser Cys Gln Arg Gly Tyr Lys Gly Val Trp Arg Gly Asp Gly Ile Met			
1205	1210	1215	
caa acc acc tgc cca tgt gga gca cag atc acc gga cat gtg aaa aac	5497		
Gln Thr Thr Cys Pro Cys Gly Ala Gln Ile Thr Gly His Val Lys Asn			
1220	1225	1230	
tgt tcc atg agg atc gtg ggg cct agg acc tgt agt aac acg tgg cat	5545		
Cys Ser Met Arg Ile Val Gly Pro Arg Thr Cys Ser Asn Thr Trp His			
1235	1240	1245	
gga aca ttc ccc att aac gcg tac acc acg ggc ccc tgc acg ccc tcc	5593		
Gly Thr Phe Pro Ile Asn Ala Tyr Thr Thr Gly Pro Cys Thr Pro Ser			
1250	1255	1260	
ccg gcg cca aat tat tct agg gcg ctg tgg cgg gtg gct gct gag gag	5641		
Pro Ala Pro Asn Tyr Ser Arg Ala Leu Trp Arg Val Ala Ala Glu Glu			
1265	1270	1275	1280

tac	gtg	gag	gtt	acg	cgg	gtg	ggg	gat	ttc	cac	tac	gtg	acg	ggc	atg	5689
Tyr	Val	Glu	Val	Thr	Arg	Val	Gly	Asp	Phe	His	Tyr	Val	Thr	Gly	Met	
1285									1290						1295	
acc	act	gac	aac	gta	aag	tgc	ccg	tgt	cag	gtt	ccg	gcc	ccc	gaa	ttc	5737
Thr	Thr	Asp	Asn	Val	Lys	Cys	Pro	Cys	Gln	Val	Pro	Ala	Pro	Glu	Phe	
1300								1305							1310	
ttc	aca	gaa	gtg	gat	ggg	gtg	ccg	ttg	cac	agg	tac	gct	cca	gcg	tgc	5785
Phe	Thr	Glu	Val	Asp	Gly	Val	Arg	Leu	His	Arg	Tyr	Ala	Pro	Ala	Cys	
1315								1320							1325	
aaa	ccc	ctc	cta	cg	gag	gtc	aca	ttc	ctg	gtc	ggg	ctc	aat	caa		5833
Lys	Pro	Leu	Leu	Arg	Glu	Glu	Val	Thr	Phe	Leu	Val	Gly	Leu	Asn	Gln	
1330							1335								1340	
tac	ctg	gtt	ggg	tca	cag	ctc	cca	tgc	gag	ccc	gaa	ccg	gac	gta	gca	5881
Tyr	Leu	Val	Gly	Ser	Gln	Leu	Pro	Cys	Glu	Pro	Glu	Pro	Asp	Val	Ala	
1345							1350			1355					1360	
gtg	ctc	act	tcc	atg	ctc	acc	gac	ccc	tcc	cac	att	acg	gct	gag	acg	5929
Val	Leu	Thr	Ser	Met	Leu	Thr	Asp	Pro	Ser	His	Ile	Thr	Ala	Glu	Thr	
1365							1370								1375	
gct	aag	cgt	agg	ctg	gcc	agg	gga	tct	ccc	ccc	tcc	ttg	gcc	agc	tca	5977
Ala	Lys	Arg	Arg	Leu	Ala	Arg	Gly	Ser	Pro	Pro	Ser	Leu	Ala	Ser	Ser	
1380							1385								1390	
tca	gct	agc	cag	ctg	tct	gct	ccc	tcc	ttg	aag	gca	aca	tgc	act	acc	6025
Ser	Ala	Ser	Gln	Leu	Ser	Ala	Pro	Ser	Leu	Lys	Ala	Thr	Cys	Thr	Thr	
1395							1400								1405	
cgt	cat	gac	tcc	ccg	gac	gct	gac	ctc	atc	gag	gcc	aac	ctc	ctg	tgg	6073
Arg	His	Asp	Ser	Pro	Asp	Ala	Asp	Leu	Ile	Glu	Ala	Asn	Leu	Leu	Trp	
1410							1415								1420	
cg	cag	gag	atg	ggc	ggg	aac	atc	acc	cgc	gtg	gag	tca	gaa	aat	aag	6121
Arg	Gln	Glu	Met	Gly	Gly	Asn	Ile	Thr	Arg	Val	Glu	Ser	Glu	Asn	Lys	
1425							1430								1440	
gta	gta	att	ttg	gac	tct	ttc	gag	ccg	ctc	caa	gct	gag	gag	gat	gag	6169
Val	Val	Ile	Leu	Asp	Ser	Phe	Glu	Pro	Leu	Gln	Ala	Glu	Glu	Asp	Glu	
1445							1450								1455	
agg	gaa	gta	tcc	gtt	ccg	gct	gag	atc	ctg	cg	agg	tcc	agg	aaa	ttc	6217
Arg	Glu	Val	Ser	Val	Pro	Ala	Glu	Ile	Leu	Arg	Arg	Ser	Arg	Lys	Phe	
1460							1465								1470	
cct	cga	gct	atg	ccc	ata	tgg	gca	cgc	ccg	gat	tac	aac	cct	cca	ctg	6265
Pro	Arg	Ala	Met	Pro	Ile	Trp	Ala	Arg	Pro	Asp	Tyr	Asn	Pro	Pro	Leu	
1475							1480								1485	
tta	gag	tcc	tgg	aag	gac	ccg	gac	tac	gtc	cct	cca	gtg	gta	cac	ggg	6313
Leu	Glu	Ser	Trp	Lys	Asp	Pro	Asp	Tyr	Val	Pro	Pro	Val	Val	His	Gly	
1490							1495								1500	

tgt cca ttg ccg cct gcc aag gcc cct ccg ata cca cct cca cgg agg		6361	
Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Ile Pro Pro Pro Arg Arg			
1505	1510	1515	1520
aag agg acg gtt gtc ctg tca gaa tct acc gtg tct tct gcc ttg gcg		6409	
Lys Arg Thr Val Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu Ala			
1525	1530	1535	
gag ctc gcc aca aag acc ttc ggc agc tcc gaa tcg tcg gcc gtc gac		6457	
Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val Asp			
1540	1545	1550	
agc ggc acg gca acg gcc tct cct gac cag ccc tcc gac gac ggc gac		6505	
Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly Asp			
1555	1560	1565	
gcg gga tcc gac gtt gag tcg tac tcc tcc atg ccc ccc ctt gag ggg		6553	
Ala Gly Ser Asp Val Glu Ser Tyr Ser Ser Met Pro Pro Leu Glu Gly			
1570	1575	1580	
gag ccg ggg gat ccc gat ctc agc gac ggg tct tgg tct acc gta agc		6601	
Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Ser Trp Ser Thr Val Ser			
1585	1590	1595	1600
gag gag gct agt gag gac gtc gtc tgc tcg atg tcc tac aca tgg		6649	
Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr Trp			
1605	1610	1615	
aca ggc gcc ctg atc acg cca tgc gct gcg gag gaa acc aag ctg ccc		6697	
Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu Pro			
1620	1625	1630	
atc aat gca ctg agc aac tct ttg ctc cgt cac cac aac ttg gtc tat		6745	
Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val Tyr			
1635	1640	1645	
gct aca aca tct cgc agc gca agc ctg cgg cag aag aag gtc acc ttt		6793	
Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr Phe			
1650	1655	1660	
gac aga ctg cag gtc ctg gac gac cac tac cgg gac gtg ctc aag gag		6841	
Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu			
1665	1670	1675	1680
atg aag gcg aag gcg tcc aca gtt aag gct aaa ctt cta tcc gtg gag		6889	
Met Lys Ala Lys Ala Ser Thr Val Lys Ala Lys Leu Leu Ser Val Glu			
1685	1690	1695	
gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt ggc		6937	
Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly			
1700	1705	1710	
tat ggg gca aag gac gtc cgg aac cta tcc agc aag gcc gtt aac cac		6985	
Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His			

1715	1720	1725	
atc cgc tcc gtg tgg aag gac ttg ctg gaa gac act gag aca cca att Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro Ile 1730	1735	1740	7033
gac acc acc atc atg gca aaa aat gag gtt ttc tgc gtc caa cca gag Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu 1745	1750	1755	7081
aag ggg ggc cgc aag cca gct cgc ctt atc gta ttc cca gat ttg ggg Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu Gly 1765	1770	1775	7129
gtt cgt gtg tgc gag aaa atg gcc ctt tac gat gtg gtc tcc acc ctc Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu 1780	1785	1790	7177
cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct gga Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly 1795	1800	1805	7225
cag cggt gtc gag ttc ctg gtg aat gct tgg aaa gcg aag aaa tgc cct Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro 1810	1815	1820	7273
atg ggc ttc gca tat gac acc cgc tgt ttt gac tca acg gtc act gag Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu 1825	1830	1835	7321
aat gac atc cgt gtt gag gag tca atc tac caa tgt tgt gac ttg gcc Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala 1845	1850	1855	7369
ccc gaa gcc aga cag gcc ata agg tcg ctc aca gag cgg ctt tac atc Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile 1860	1865	1870	7417
ggg ggc ccc ctg act aat tct aaa ggg cag aac tgc ggc tat cgc cgg Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg 1875	1880	1885	7465
tgc cgc gcg agc ggt gta ctg acg acc agc tgc ggt aat acc ctc aca Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr 1890	1895	1900	7513
tgt tac ttg aag gcc gct gcg gcc tgt cga gct gcg aag ctc cag gac Cys Tyr Leu Lys Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp 1905	1910	1915	7561
tgc acg atg ctc gta tgc gga gac gac ctt gtc gtt atc tgt gaa agc Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser 1925	1930	1935	7609
gcg ggg acc caa gag gac gag gcg agc cta cgg gcc ttc acg gag gct			7657

Ala Gly Thr Gln Glu Asp Glu Ala Ser Leu Arg Ala Phe Thr Glu Ala			
1940	1945	1950	
atg act aga tac tct gcc ccc cct ggg gac ccg ccc aaa cca gaa tac		7705	
Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp Pro Pro Lys Pro Glu Tyr			
1955	1960	1965	
gac ttg gag ttg ata aca tca tgc tcc tcc aat gtg tca gtc gcg cac		7753	
Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser Asn Val Ser Val Ala His			
1970	1975	1980	
gat gca tct ggc aaa agg gtg tac tat ctc acc cgt gac ccc acc acc		7801	
Asp Ala Ser Gly Lys Arg Val Tyr Tyr Leu Thr Arg Asp Pro Thr Thr			
1985	1990	1995	2000
ccc ctt gcg cgg gct gcg tgg gag aca gct aga cac act cca gtc aat		7849	
Pro Leu Ala Arg Ala Ala Trp Glu Thr Ala Arg His Thr Pro Val Asn			
2005	2010	2015	
tcc tgg cta ggc aac atc atc atg tat gcg ccc acc ttg tgg gca agg		7897	
Ser Trp Leu Gly Asn Ile Ile Met Tyr Ala Pro Thr Leu Trp Ala Arg			
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atg atc ctg atg act cat ttc ttc tcc atc ctt cta gct cag gaa caa		7945	
Met Ile Leu Met Thr His Phe Phe Ser Ile Leu Leu Ala Gln Glu Gln			
2035	2040	2045	
ctt gaa aaa gcc cta gat tgt cag atc tac ggg gcc tgt tac tcc att		7993	
Leu Glu Lys Ala Leu Asp Cys Gln Ile Tyr Gly Ala Cys Tyr Ser Ile			
2050	2055	2060	
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Glu Pro Leu Asp Leu Pro Gln Ile Ile Gln Arg Leu His Gly Leu Ser			
2065	2070	2075	2080
gca ttt tca ctc cat agt tac tct cca ggt gag atc aat agg gtg gct		8089	
Ala Phe Ser Leu His Ser Tyr Ser Pro Gly Glu Ile Asn Arg Val Ala			
2085	2090	2095	
tca tgc ctc agg aaa ctt ggg gta ccg ccc ttg cga gtc tgg aga cat		8137	
Ser Cys Leu Arg Lys Leu Gly Val Pro Pro Leu Arg Val Trp Arg His			
2100	2105	2110	
cgg gcc aga agt gtc cgc gct agg cta ctg tcc cag ggg ggg agg gct		8185	
Arg Ala Arg Ser Val Arg Ala Arg Leu Leu Ser Gln Gly Gly Arg Ala			
2115	2120	2125	
gcc act tgt ggc aag tac ctc aac tgg gca gta agg acc aag ctc		8233	
Ala Thr Cys Gly Lys Tyr Leu Phe Asn Trp Ala Val Arg Thr Lys Leu			
2130	2135	2140	
aaa ctc act cca atc ccg gct gcg tcc cag ttg gat tta tcc agc tgg		8281	
Lys Leu Thr Pro Ile Pro Ala Ala Ser Gln Leu Asp Leu Ser Ser Trp			
2145	2150	2155	2160

ttc gtt gct ggt tac agc ggg gga gac ata tat cac agc ctg tct cgt	8329
Phe Val Ala Gly Tyr Ser Gly Gly Asp Ile Tyr His Ser Leu Ser Arg	
2165 2170 2175	
 gcc cga ccc cgc tgg ttc acg tgg tgc cta ctc cta ctt tct gta ggg	8377
Ala Arg Pro Arg Trp Phe Thr Trp Cys Leu Leu Leu Ser Val Gly	
2180 2185 2190	
 gta ggc atc tat cta ctc ccc aac cga tga acggggagct aaacactcca	8427
Val Gly Ile Tyr Leu Leu Pro Asn Arg *	
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agttcctctg gaagcttctt gaagacaaaac aacgtctgtat ggcgcctt gcaggcagcg 1500	
gaacccccc cctggcgaca ggtgcctctg cggccaaaag ccacgtgtat aagatacacc 1560	
tgcaaaggcg gcacaacccc agtgcacgt tgcgttgtt atagttgtgg aaagagtcaa 1620	
atggctctcc tcaagcgat tcaacaaggc gctgaaggat gcccagaagg taccctattt 1680	

tatgggatct gatctggggc ctccgtgcac atgcttaca tggtttagt cgaggtaaa 1740  
 aaacgtctag gccccccgaa ccacggggac gtggtttcc tttgaaaaac acgataatac 1800  
 c atg gac cgg gag atg gca gca tcg tgc gga ggc gcg gtt ttc gta ggt 1849  
 Met Asp Arg Glu Met Ala Ala Ser Cys Gly Gly Ala Val Phe Val Gly  
 1 5 10 15

ctg ata ctc ttg acc ttg tca ccg cac tat aag ctg ttc ctc gct agg 1897  
 Leu Ile Leu Leu Thr Leu Ser Pro His Tyr Lys Leu Phe Leu Ala Arg  
 20 25 30

ctc ata tgg tgg tta caa tat ttt atc acc agg gcc gag gca cac ttg 1945  
 Leu Ile Trp Trp Leu Gln Tyr Phe Ile Thr Arg Ala Glu Ala His Leu  
 35 40 45

caa gtg tgg atc ccc ccc ctc aac gtt cgg ggg ggc cgc gat gcc gtc 1993  
 Gln Val Trp Ile Pro Pro Leu Asn Val Arg Gly Gly Arg Asp Ala Val  
 50 55 60

atc ctc ctc acg tgc gcg atc cac cca gag cta atc ttt acc atc acc 2041  
 Ile Leu Leu Thr Cys Ala Ile His Pro Glu Leu Ile Phe Thr Ile Thr  
 65 70 75 80

aaa atc ttg ctc gcc ata ctc ggt cca ctc atg gtg ctc cag gct ggt 2089  
 Lys Ile Leu Leu Ala Ile Leu Gly Pro Leu Met Val Leu Gln Ala Gly  
 85 90 95

ata acc aaa gtg ccg tac ttc gtg cgc gca cac ggg ctc att cgt gca 2137  
 Ile Thr Lys Val Pro Tyr Phe Val Arg Ala His Gly Leu Ile Arg Ala  
 100 105 110

tgc atg ctg gtg cgg aag gtt gct ggg ggt cat tat gtc caa atg gct 2185  
 Cys Met Leu Val Arg Lys Val Ala Gly Gly His Tyr Val Gln Met Ala  
 115 120 125

ctc atg aag ttg gcc gca ctg aca ggt acg tac gtt tat gac cat ctc 2233  
 Leu Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His Leu  
 130 135 140

acc cca ctg cgg gac tgg gcc cac gcg ggc cta cga gac ctt gcg gtg 2281  
 Thr Pro Leu Arg Asp Trp Ala His Ala Gly Leu Arg Asp Leu Ala Val  
 145 150 155 160

gca gtt gag ccc gtc gtc ttc tct gat atg gag acc aag gtt atc acc 2329  
 Ala Val Glu Pro Val Val Phe Ser Asp Met Glu Thr Lys Val Ile Thr  
 165 170 175

tgg ggg gca gac acc gcg gcg tgt ggg gac atc atc ttg ggc ctg ccc 2377  
 Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Leu Gly Leu Pro  
 180 185 190

gtc tcc gcc cgc agg ggg agg gag ata cat ctg gga ccg gca gac agc 2425  
 Val Ser Ala Arg Arg Gly Arg Glu Ile His Leu Gly Pro Ala Asp Ser  
 195 200 205

ctt gaa ggg cag ggg tgg cga ctc ctc gcg cct att acg gcc tac tcc 2473

Leu	Glu	Gly	Gln	Gly	Trp	Arg	Leu	Leu	Ala	Pro	Ile	Thr	Ala	Tyr	Ser	
210							215									220
caa	cag	acg	cga	ggc	cta	ctt	ggc	tgc	atc	atc	act	agc	ctc	aca	ggc	2521
Gln	Gln	Thr	Arg	Gly	Leu	Leu	Gly	Cys	Ile	Ile	Thr	Ser	Leu	Thr	Gly	
225							230									240
cgg	gac	agg	aac	cag	gtc	gag	ggg	gag	gtc	caa	gtg	gtc	tcc	acc	gca	2569
Arg	Asp	Arg	Asn	Gln	Val	Glu	Gly	Glu	Val	Gln	Val	Val	Ser	Thr	Ala	
245							250									255
aca	caa	tct	ttc	ctg	gcg	acc	tgc	gtc	aat	ggc	gtg	tgt	tgg	act	gtc	2617
Thr	Gln	Ser	Phe	Leu	Ala	Thr	Cys	Val	Asn	Gly	Val	Cys	Trp	Thr	Val	
260							265									270
tat	cat	ggt	gcc	ggc	tca	aag	acc	ctt	gcc	ggc	cca	aag	ggc	cca	atc	2665
Tyr	His	Gly	Ala	Gly	Ser	Lys	Thr	Leu	Ala	Gly	Pro	Lys	Gly	Pro	Ile	
275							280									285
acc	caa	atg	tac	acc	aat	gtg	gac	cag	gac	ctc	gtc	ggc	tgg	caa	gcg	2713
Thr	Gln	Met	Tyr	Thr	Asn	Val	Asp	Gln	Asp	Leu	Val	Gly	Trp	Gln	Ala	
290							295									300
ccc	ccc	ggg	gcf	cgt	tcc	ttg	aca	cca	tgc	acc	tgc	ggc	agc	tcg	gac	2761
Pro	Pro	Gly	Ala	Arg	Ser	Leu	Thr	Pro	Cys	Thr	Cys	Gly	Ser	Ser	Asp	
305							310									320
ctt	tac	ttg	gtc	acg	agg	cat	gcc	gat	gtc	att	ccg	gtg	cgc	cgg	cgg	2809
Leu	Tyr	Leu	Val	Thr	Arg	His	Ala	Asp	Val	Ile	Pro	Val	Arg	Arg	Arg	
325							330									335
ggc	gac	ggc	agg	ggg	agc	cta	ctc	tcc	ccc	agg	ccc	gtc	tcc	tac	ttg	2857
Gly	Asp	Gly	Arg	Gly	Ser	Leu	Leu	Ser	Pro	Arg	Pro	Val	Ser	Tyr	Leu	
340							345									350
aag	ggc	tct	tcg	ggc	ggt	cca	ctg	ctc	tgc	ccc	tcg	ggg	cac	gct	gtg	2905
Lys	Gly	Ser	Ser	Gly	Gly	Pro	Leu	Leu	Cys	Pro	Ser	Gly	His	Ala	Val	
355							360									365
ggc	atc	ttt	cgg	gct	gcc	gtg	tgc	acc	cga	ggg	gtt	gcf	aag	gcf	gtg	2953
Gly	Ile	Phe	Arg	Ala	Ala	Val	Cys	Thr	Arg	Gly	Val	Ala	Lys	Ala	Val	
370							375									380
gac	ttt	gta	ccc	gtc	gag	tct	atg	gga	acc	act	atg	cgg	tcc	ccg	gtc	3001
Asp	Phe	Val	Pro	Val	Glu	Ser	Met	Gly	Thr	Thr	Met	Arg	Ser	Pro	Val	
385							390									400
ttc	acg	gac	aac	tcg	tcc	cct	ccg	gcc	gta	ccg	cag	aca	ttc	cag	gtg	3049
Phe	Thr	Asp	Asn	Ser	Ser	Pro	Pro	Ala	Val	Pro	Gln	Thr	Phe	Gln	Val	
405							410									415
gcc	cat	cta	cac	gcc	cct	act	ggt	agc	ggc	aag	agc	act	aag	gtg	ccg	3097
Ala	His	Leu	His	Ala	Pro	Thr	Gly	Ser	Gly	Lys	Ser	Thr	Lys	Val	Pro	
420							425									430

gct gcg tat gca gcc caa ggg tat aag gtg ctt gtc ctg aac ccg tcc Ala Ala Tyr Ala Ala Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser 435 440 445	3145
gtc gcc gcc acc cta ggt ttc ggg gcg tat atg tct aag gca cat ggt Val Ala Ala Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Ala His Gly 450 455 460	3193
atc gac cct aac atc aga acc ggg gta agg acc atc acc acg ggt gcc Ile Asp Pro Asn Ile Arg Thr Gly Val Arg Thr Ile Thr Thr Gly Ala 465 470 475 480	3241
ccc atc acg tac tcc acc tat ggc aag ttt ctt gcc gac ggt ggt tgc Pro Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly Cys 485 490 495	3289
tct ggg ggc gcc tat gac atc ata ata tgt gat gag tgc cac tca act Ser Gly Gly Ala Tyr Asp Ile Ile Cys Asp Glu Cys His Ser Thr 500 505 510	3337
gac tcg acc act atc ctg ggc atc ggc aca gtc ctg gac caa gcg gag Asp Ser Thr Thr Ile Leu Gly Ile Gly Thr Val Leu Asp Gln Ala Glu 515 520 525	3385
acg gct gga gcg cga ctc gtc gtg ctc gcc acc gct acg cct ccg gga Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr Ala Thr Pro Pro Gly 530 535 540	3433
tcg gtc acc gtg cca cat cca aac atc gag gag gtg gct ctg tcc agc Ser Val Thr Val Pro His Pro Asn Ile Glu Glu Val Ala Leu Ser Ser 545 550 555 560	3481
act gga gaa atc ccc ttt tat ggc aaa gcc atc ccc atc gag acc atc Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Ile Glu Thr Ile 565 570 575	3529
aag ggg ggg agg cac ctc att ttc tgc cat tcc aag aag aaa tgt gat Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp 580 585 590	3577
gag ctc gcc gcg aag ctg tcc ggc ctc gga ctc aat gct gta gca tat Glu Leu Ala Ala Lys Leu Ser Gly Leu Gly Leu Asn Ala Val Ala Tyr 595 600 605	3625
tac cgg ggc ctt gat gta tcc gtc ata cca act agc gga gac gtc att Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp Val Ile 610 615 620	3673
gtc gta gca acg gac gct cta atg acg ggc ttt acc ggc gat ttc gac Val Val Ala Thr Asp Ala Leu Met Thr Gly Phe Thr Gly Asp Phe Asp 625 630 635 640	3721
tca gtg atc gac tgc aat aca tgt gtc acc cag aca gtc gac ttc agc Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser 645 650 655	3769

ctg gac ccg acc ttc acc att gag acg acg acc gtg cca caa gac gcg		3817
Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Val Pro Gln Asp Ala		
660	665	670
gtg tca cgc tcg cag cgg cga ggc agg act ggt agg ggc agg atg ggc		3865
Val Ser Arg Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Met Gly		
675	680	685
att tac agg ttt gtg act cca gga gaa cgg ccc tcg ggc atg ttc gat		3913
Ile Tyr Arg Phe Val Thr Pro Gly Glu Arg Pro Ser Gly Met Phe Asp		
690	695	700
tcc tcg gtt ctg tgc gag tgc tat gac gcg ggc tgt gct tgg tac gag		3961
Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu		
705	710	715
720		
ctc acg ccc gcc gag acc tca gtt agg ttg cgg gct tac cta aac aca		4009
Leu Thr Pro Ala Glu Thr Ser Val Arg Leu Arg Ala Tyr Leu Asn Thr		
725	730	735
cca ggg ttg ccc gtc tgc cag gac cat ctg gag ttc tgg gag agc gtc		4057
Pro Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Ser Val		
740	745	750
ttt aca ggc ctc acc cac ata gac gcc cat ttc ttg tcc cag act aag		4105
Phe Thr Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys		
755	760	765
cag gca gga gac aac ttc ccc tac ctg gta gca tac cag gct acg gtg		4153
Gln Ala Gly Asp Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val		
770	775	780
tgc gcc agg gct cag gct cca cct cca tcg tgg gac caa atg tgg aag		4201
Cys Ala Arg Ala Gln Ala Pro Pro Pro Ser Trp Asp Gln Met Trp Lys		
785	790	795
800		
tgt ctc ata cgg cta aag cct acg ctg cac ggg cca acg ccc ctg ctg		4249
Cys Leu Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu		
805	810	815
tat agg ctg gga gcc gtt caa aac gag gtt act acc aca cac ccc ata		4297
Tyr Arg Leu Gly Ala Val Gln Asn Glu Val Thr Thr His Pro Ile		
820	825	830
acc aaa tac atc atg gca tgc atg tcg gct gac ctg gag gtc gtc acg		4345
Thr Lys Tyr Ile Met Ala Cys Met Ser Ala Asp Leu Glu Val Val Thr		
835	840	845
agc acc tgg gtg ctg gta ggc gga gtc cta gca gct ctg gcc gcg tat		4393
Ser Thr Trp Val Leu Val Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr		
850	855	860
tgc ctg aca aca ggc agc gtg gtc att gtg ggc agg atc atc ttg tcc		4441
Cys Leu Thr Thr Gly Ser Val Val Ile Val Gly Arg Ile Ile Leu Ser		

865	870	875	880	
gga aag ccg gcc atc att ccc gac agg gaa gtc ttt tac cg <sup>g</sup> gag ttc Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu Val Phe Tyr Arg Glu Phe 885		890		895
gat gag atg gaa gag tgc gcc tca cac ctc cct tac atc gaa cag gga Asp Glu Met Glu Glu Cys Ala Ser His Leu Pro Tyr Ile Glu Gln Gly 900	905		910	4537
atg cag ctc gcc gaa caa ttc aaa cag aag gca atc ggg ttg ctg caa Met Gln Leu Ala Glu Gln Phe Lys Gln Lys Ala Ile Gly Leu Leu Gln 915	920	925		4585
aca gcc acc aag caa gcg gag gct gct ccc gtg gtg gaa tcc aag Thr Ala Thr Lys Gln Ala Glu Ala Ala Pro Val Val Glu Ser Lys 930	935	940		4633
tgg cgg acc ctc gaa gcc ttc tgg gcg aag cat atg tgg aat ttc atc Trp Arg Thr Leu Glu Ala Phe Trp Ala Lys His Met Trp Asn Phe Ile 945	950	955	960	4681
agc ggg ata caa tat tta gca ggc ttg tcc act ctg cct ggc aac ccc Ser Gly Ile Gln Tyr Leu Ala Gly Leu Ser Thr Leu Pro Gly Asn Pro 965	970		975	4729
gcg ata gca tca ctg atg gca ttc aca gcc tct atc acc agc ccg ctc Ala Ile Ala Ser Leu Met Ala Phe Thr Ala Ser Ile Thr Ser Pro Leu 980	985		990	4777
acc acc caa cat acc ctc ctg ttt aac atc ctg ggg gga tgg gtg gcc Thr Thr Gln His Thr Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Ala 995	1000	1005		4825
gcc caa ctt gct cct ccc agc gct gct tct gct ttc gta ggc gcc ggc Ala Gln Leu Ala Pro Pro Ser Ala Ala Ser Ala Phe Val Gly Ala Gly 1010	1015	1020		4873
atc gct gga gcg gct gtt ggc agc ata ggc ctt ggg aag gtg ctt gtg Ile Ala Gly Ala Ala Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val 1025	1030	1035	1040	4921
gat att ttg gca ggt tat gga gca ggg gtg gca ggc gcg ctc gtg gcc Asp Ile Leu Ala Gly Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala 1045	1050		1055	4969
ttt aag gtc atg agc ggc gag atg ccc tcc acc gag gac ctg gtt aac Phe Lys Val Met Ser Gly Glu Met Pro Ser Thr Glu Asp Leu Val Asn 1060	1065		1070	5017
cta ctc cct gct atc ctc tcc cct ggc gcc cta gtc gtc ggg gtc gtg Leu Leu Pro Ala Ile Leu Ser Pro Gly Ala Leu Val Val Gly Val Val 1075	1080	1085		5065
tgc gca gcg ata ctg cgt cgg cac gtg ggc cca ggg gag ggg gct gtg				5113

Cys Ala Ala Ile Leu Arg Arg His Val Gly Pro Gly Glu Gly Ala Val			
1090	1095	1100	
cag tgg atg aac cgg ctg ata gcg ttc gct tcg cgg ggt aac cac gtc	5161		
Gln Trp Met Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val			
1105	1110	1115	1120
tcc ccc acg cac tat gtg cct gag agc gac gct gca gca cgt gtc act	5209		
Ser Pro Thr His Tyr Val Pro Glu Ser Asp Ala Ala Arg Val Thr			
1125	1130	1135	
cag atc ctc tct agt ctt acc atc act cag ctg ctg aag agg ctt cac	5257		
Gln Ile Leu Ser Ser Leu Thr Ile Thr Gln Leu Leu Lys Arg Leu His			
1140	1145	1150	
cag tgg atc aac gag gac tgc tcc acg cca tgc tcc ggc tcg tgg cta	5305		
Gln Trp Ile Asn Glu Asp Cys Ser Thr Pro Cys Ser Gly Ser Trp Leu			
1155	1160	1165	
aga gat gtt tgg gat tgg ata tgc acg gtg ttg act gat ttc aag acc	5353		
Arg Asp Val Trp Asp Trp Ile Cys Thr Val Leu Thr Asp Phe Lys Thr			
1170	1175	1180	
tgg ctc cag tcc aag ctc ctg ccg cga ttg ccg gga gtc ccc ttc ttc	5401		
Trp Leu Gln Ser Lys Leu Leu Pro Arg Leu Pro Gly Val Pro Phe Phe			
1185	1190	1195	1200
tca tgt caa cgt ggg tac aag gga gtc tgg ccg ggc gac ggc atc atg	5449		
Ser Cys Gln Arg Gly Tyr Lys Gly Val Trp Arg Gly Asp Gly Ile Met			
1205	1210	1215	
caa acc acc tgc cca tgt gga gca cag atc acc gga cat gtg aaa aac	5497		
Gln Thr Thr Cys Pro Cys Gly Ala Gln Ile Thr Gly His Val Lys Asn			
1220	1225	1230	
cgt tcc atg agg atc gtg ggg cct agg acc tgt aac acg tgg cat	5545		
Arg Ser Met Arg Ile Val Gly Pro Arg Thr Cys Ser Asn Thr Trp His			
1235	1240	1245	
gga aca ttc ccc att aac gcg tac acc acg ggc ccc tgc acg ccc tcc	5593		
Gly Thr Phe Pro Ile Asn Ala Tyr Thr Thr Gly Pro Cys Thr Pro Ser			
1250	1255	1260	
ccg gcg cca aat tat tct agg gcg ctg tgg ccg gtg gct gct gag gag	5641		
Pro Ala Pro Asn Tyr Ser Arg Ala Leu Trp Arg Val Ala Ala Glu Glu			
1265	1270	1275	1280
tac gtg gag gtt acg cgg gtg ggg gat ttc cac tac gtg acg ggc atg	5689		
Tyr Val Glu Val Thr Arg Val Gly Asp Phe His Tyr Val Thr Gly Met			
1285	1290	1295	
acc act gac aac gta aag tgc ccg tgt cag gtt ccg gcc ccc gaa ttc	5737		
Thr Thr Asp Asn Val Lys Cys Pro Cys Gln Val Pro Ala Pro Glu Phe			
1300	1305	1310	

ttc aca gaa gtg gat ggg gtg cggttgcacagg tac gct cca gcg tgc Phe Thr Glu Val Asp Gly Val Arg Leu His Arg Tyr Ala Pro Ala Cys 1315 1320 1325	5785
aaa ccc ctc cta cgg gag gag gtc aca ttccctggctc aat caa Lys Pro Leu Leu Arg Glu Glu Val Thr Phe Leu Val Gly Leu Asn Gln 1330 1335 1340	5833
tac ctg gtt ggg tca cag ctc cca tgc gag ccc gaa ccg gac gta gca Tyr Leu Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Pro Asp Val Ala 1345 1350 1355 1360	5881
gtg ctc act tcc atg ctc acc gac ccc tcc cac att acg gcg gag acg Val Leu Thr Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr 1365 1370 1375	5929
gct aag cgt agg ctg gcc agg gga tct ccc ccc tcc ttg gcc agc tca Ala Lys Arg Arg Leu Ala Arg Gly Ser Pro Pro Ser Leu Ala Ser Ser 1380 1385 1390	5977
tca gct agc cag ctg tct gcgccttcc aag gca aca tgc act acc Ser Ala Ser Gln Leu Ser Ala Pro Ser Leu Lys Ala Thr Cys Thr Thr 1395 1400 1405	6025
cgt cat gac tcc ccg gac gct gac ctc atc gag gcc aac ctc ctg tgg Arg His Asp Ser Pro Asp Ala Asp Leu Ile Glu Ala Asn Leu Leu Trp 1410 1415 1420	6073
cgg cag gag atg ggc ggg aac atc acc cgc gtg gag tca gaa aat aag Arg Gln Glu Met Gly Gly Asn Ile Thr Arg Val Glu Ser Glu Asn Lys 1425 1430 1435 1440	6121
gta gta att ttg gac tct ttc gag ccgcctcaa gcg gag gag gat gag Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp Glu 1445 1450 1455	6169
agg gaa gta tcc gtt ccg gcgcggatcctgtcgagg tcc agg aaa ttc Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe 1460 1465 1470	6217
cct cga gcg atg ccc ata tgg gca cgc ccg gat tac aac cct cca ctg Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro Leu 1475 1480 1485	6265
tta gag tcc tgg aag gac ccg gac tac gtc cct cca gtg gta cac ggg Leu Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His Gly 1490 1495 1500	6313
tgt cca ctg ccgcctgcc aag gcc cct ccg ata cca cct cca ccg agg Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Ile Pro Pro Pro Arg Arg 1505 1510 1515 1520	6361
aag agg acg gtt gtc ctg tca gaa tct acc gtg tct tct gcc ttg gcg Lys Arg Thr Val Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu Ala 1525 1530 1535	6409

gag ctc gcc aca aag acc ttc ggc agc tcc gaa tcg tcg gcc gtc gac Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val Asp 1540 1545 1550	6457
agc ggc acg gca acg gcc tct cct gac cag ccc tcc gac gac ggc gac Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly Asp 1555 1560 1565	6505
gcg gga tcc gac gtt gag tcg tac tcc atg ccc ccc ctt gag ggg Ala Gly Ser Asp Val Glu Ser Tyr Ser Met Pro Pro Leu Glu Gly 1570 1575 1580	6553
gag ccg ggg gat ccc gat ctc agc gac ggg cct tgg tct acc gta agc Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Pro Trp Ser Thr Val Ser 1585 1590 1595 1600	6601
gag gag gct agt gag gac gtc gtc tgc tcg atg tcc tac aca tgg Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr Trp 1605 1610 1615	6649
aca ggc gcc ctg atc acg cca tgc gct gcg gag gaa acc aag ctg ccc Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu Pro 1620 1625 1630	6697
atc aat gca ctg agc aac tct ttg ctc cgt cac cac aac ttg gtc tat Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val Tyr 1635 1640 1645	6745
gct aca aca tct cgc agc gca agc ctg cgg cag aag aag gtc acc ttt Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr Phe 1650 1655 1660	6793
gac aga ctg cag gtc ctg gac gac cac tac cgg gac gtg ctc aag gag Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu 1665 1670 1675 1680	6841
atg aag gcg aag gcg tcc aca gtt aag gct aaa ctt cta tcc gtg gag Met Lys Ala Lys Ala Ser Thr Val Lys Ala Lys Leu Ser Val Glu 1685 1690 1695	6889
gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt ggc Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly 1700 1705 1710	6937
tat ggg gca aag gac gtc cgg aac cta tcc agc aag gcc gtt aac cac Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His 1715 1720 1725	6985
atc cgc tcc gtg tgg aag gac ttg ctg gaa gac act gag aca cca att Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro Ile 1730 1735 1740	7033
gac acc acc atc atg gca aaa aat gag gtt ttc tgc gtc caa cca gag Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu	7081

1745	1750	1755	1760	
aag ggg ggc cgc aag cca gct cgc ctt atc gta ttc cca gat ttg ggg Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu Gly 1765		1770	1775	7129
gtt cgt gtg tgc gag aaa atg gcc ctt tac gat gtg gtc tcc acc ctc Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu 1780	1785		1790	7177
cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct gga Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly 1795	1800	1805		7225
cag cggtc gag ttc ctg gtg aat gcc tgg aaa gcg aag aaa tgc cct Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro 1810	1815	1820		7273
atg ggc ttc gca tat gac acc cgc tgt ttt gac tca acg gtc act gag Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu 1825	1830	1835	1840	7321
aat gac atc cgt gtt gag gag tca atc tac caa tgt tgt gac ttg gcc Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala 1845	1850		1855	7369
ccc gaa gcc aga cag gcc ata agg tcg ctc aca gag cgg ctt tac atc Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile 1860	1865	1870		7417
ggg ggc ccc ctg act aat tct aaa ggg cag aac tgc ggc tat cgc cgg Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg 1875	1880	1885		7465
tgc cgc gcg agc ggt gta ctg acg acc agc tgc ggt aat acc ctc aca Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr 1890	1895	1900		7513
tgt tac ttg aag gcc gct gcg gcc tgt cga gct gcg aag ctc cag gac Cys Tyr Leu Lys Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp 1905	1910	1915	1920	7561
tgc acg atg ctc gta tgc gga gac gac ctt gtc gtt atc tgt gaa agc Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser 1925	1930		1935	7609
gcg ggg acc caa gag gac gag gcg agc cta cgg gcc ttc acg gag gct Ala Gly Thr Gln Glu Asp Glu Ala Ser Leu Arg Ala Phe Thr Glu Ala 1940	1945	1950		7657
atg act aga tac tct gcc ccc cct ggg gac ccg ccc aaa cca gaa tac Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp Pro Pro Lys Pro Glu Tyr 1955	1960	1965		7705
gac ttg gag ttg ata aca tca tgc tcc aat gtg tca gtc gcg cac				7753

Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser Asn Val Ser Val Ala His			
1970	1975	1980	
gat gca tct ggc aaa agg gtg tac tat ctc acc cgt gac ccc acc acc 7801			
Asp Ala Ser Gly Lys Arg Val Tyr Tyr Leu Thr Arg Asp Pro Thr Thr			
1985	1990	1995	2000
ccc ctt gcg cgg gct gcg tgg gag aca gct aga cac act cca gtc aat 7849			
Pro Leu Ala Arg Ala Ala Trp Glu Thr Ala Arg His Thr Pro Val Asn			
2005	2010	2015	
tcc tgg cta ggc aac atc atc atg tat gcg ccc acc ttg tgg gca agg 7897			
Ser Trp Leu Gly Asn Ile Ile Met Tyr Ala Pro Thr Leu Trp Ala Arg			
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atg atc ctg atg act cat ttc ttc atc ctt cta gct cag gaa caa 7945			
Met Ile Leu Met Thr His Phe Phe Ser Ile Leu Leu Ala Gln Glu Gln			
2035	2040	2045	
ctt gaa aaa gcc cta gat tgt cag atc tac ggg gcc tgt tac tcc att 7993			
Leu Glu Lys Ala Leu Asp Cys Gln Ile Tyr Gly Ala Cys Tyr Ser Ile			
2050	2055	2060	
gag cca ctt gac cta cct cag atc att caa cga ctc cac ggc ctt agc 8041			
Glu Pro Leu Asp Leu Pro Gln Ile Ile Gln Arg Leu His Gly Leu Ser			
2065	2070	2075	2080
gca ttt tca ctc cat agt tac tct cca ggt gag atc aat agg gtg gct 8089			
Ala Phe Ser Leu His Ser Tyr Ser Pro Gly Glu Ile Asn Arg Val Ala			
2085	2090	2095	
tca tgc ctc agg aaa ctt ggg gta ccg ccc ttg cga gtc tgg aga cat 8137			
Ser Cys Leu Arg Lys Leu Gly Val Pro Pro Leu Arg Val Trp Arg His			
2100	2105	2110	
cgg gcc aga agt gtc cgc gct agg cta ctg tcc cag ggg ggg agg gct 8185			
Arg Ala Arg Ser Val Arg Ala Arg Leu Leu Ser Gln Gly Gly Arg Ala			
2115	2120	2125	
gcc act tgt ggc aag tac ctc aac tgg gca gta agg acc aag ctc 8233			
Ala Thr Cys Gly Lys Tyr Leu Phe Asn Trp Ala Val Arg Thr Lys Leu			
2130	2135	2140	
aaa ctc act cca atc ccg gct gcg tcc cag ttg gat tta tcc agc tgg 8281			
Lys Leu Thr Pro Ile Pro Ala Ala Ser Gln Leu Asp Leu Ser Ser Trp			
2145	2150	2155	2160
ttc gtt gct ggt tac agc ggg gga gac ata tat cac agc ctg tct cgt 8329			
Phe Val Ala Gly Tyr Ser Gly Gly Asp Ile Tyr His Ser Leu Ser Arg			
2165	2170	2175	
gcc cga ccc cgc tgg ttc atg tgg tgc cta ctc cta ctt tct gta ggg 8377			
Ala Arg Pro Arg Trp Phe Met Trp Cys Leu Leu Leu Ser Val Gly			
2180	2185	2190	

gta ggc atc tat cta ctc ccc aac cga tga acggggagct aaacactcca	8427		
Val Gly Ile Tyr Leu Leu Pro Asn Arg *			
2195	2200		
ggccaatagg ccacatcggtt tttttttttt tttttttttt tttttttttt tttttttttt 8487			
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c atg gac cgg gag atg gca gca tcg tgc gga ggc gcg gtt ttc gta gtc 1849			
Met Asp Arg Glu Met Ala Ala Ser Cys Gly Gly Ala Val Phe Val Gly			
1	5	10	15
ctg ata ctc ttg acc ttg tca ccg cac tat aag ctg ttc ctc gct agg 1897			
Leu Ile Leu Leu Thr Leu Ser Pro His Tyr Lys Leu Phe Leu Ala Arg			

20	25	30	
ctc ata tgg tgg tta caa tat ttt atc acc agg gcc gag gca cac ttg Leu Ile Trp Trp Leu Gln Tyr Phe Ile Thr Arg Ala Glu Ala His Leu 35	40	45	1945
caa gtg tgg atc ccc ccc ctc aac gtt cgg ggg ggc cgc gat gcc gtc Gln Val Trp Ile Pro Pro Leu Asn Val Arg Gly Arg Asp Ala Val 50	55	60	1993
atc ctc ctc acg tgc gcg atc cac cca gag cta atc ttt acc atc acc Ile Leu Leu Thr Cys Ala Ile His Pro Glu Leu Ile Phe Thr Ile Thr 65	70	75	2041
aaa atc ttg ctc gcc ata ctc ggt cca ctc atg gtg ctc cag gct ggt Lys Ile Leu Leu Ala Ile Leu Gly Pro Leu Met Val Leu Gln Ala Gly 85	90	95	2089
ata acc aaa gtg ccg tac ttc gtg cgc gca cac ggg ctc att cgt gca Ile Thr Lys Val Pro Tyr Phe Val Arg Ala His Gly Leu Ile Arg Ala 100	105	110	2137
tgc atg ctg gtg cgg aag gtt gct ggg ggt cat tat gtc caa atg gct Cys Met Leu Val Arg Lys Val Ala Gly Gly His Tyr Val Gln Met Ala 115	120	125	2185
ctc atg aag ttg gcc gca ctg aca ggt acg tac gtt tat gac cat ctc Leu Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His Leu 130	135	140	2233
acc cca ctg cgg gac tgg gcc cac gcg ggc cta cga gac ctt gcg gtg Thr Pro Leu Arg Asp Trp Ala His Ala Gly Leu Arg Asp Leu Ala Val 145	150	155	2281
gca gtt gag ccc gtc gtc ttc tct gat atg gag acc aag gtt atc acc Ala Val Glu Pro Val Val Phe Ser Asp Met Glu Thr Lys Val Ile Thr 165	170	175	2329
tgg ggg gca gac acc gcg gcg tgt ggg gac atc atc ttg ggc ctg ccc Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Leu Gly Leu Pro 180	185	190	2377
gtc tcc gcc cgc agg ggg agg gag ata cat ctg gga ccg gca gac agc Val Ser Ala Arg Arg Gly Arg Glu Ile His Leu Gly Pro Ala Asp Ser 195	200	205	2425
ctt gaa ggg cag ggg tgg cga ctc ctc gcg cct att acg gcc tac tcc Leu Glu Gly Gln Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala Tyr Ser 210	215	220	2473
caa cag acg cga ggc cta ctt ggc tgc atc atc acc agc ctc aca ggc Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly 225	230	235	2521
cgg gac agg aac cag gtc gag ggg gag gtc caa gtg gtc tcc acc gca			240
			2569

Arg	Asp	Arg	Asn	Gln	Val	Glu	Gly	Glu	Val	Gln	Val	Val	Ser	Thr	Ala	
				245		250								255		
aca	caa	tct	ttc	ctg	gcg	acc	tgc	gtc	aat	ggc	gtg	tgt	tgg	act	gtc	2617
Thr	Gln	Ser	Phe	Leu	Ala	Thr	Cys	Val	Asn	Gly	Val	Cys	Trp	Thr	Val	
				260		265							270			
tat	cat	ggt	gcc	ggc	tca	aag	acc	ctt	gcc	ggc	cca	aag	ggc	cca	atc	2665
Tyr	His	Gly	Ala	Gly	Ser	Lys	Thr	Leu	Ala	Gly	Pro	Lys	Gly	Pro	Ile	
				275		280						285				
acc	caa	atg	tac	acc	aat	gtg	gac	cag	gac	ctc	gtc	ggc	tgg	caa	gcg	2713
Thr	Gln	Met	Tyr	Thr	Asn	Val	Asp	Gln	Asp	Leu	Val	Gly	Trp	Gln	Ala	
				290		295					300					
ccc	ccc	ggg	gcf	cgt	tcc	ttg	aca	cca	tgc	acc	tgc	ggc	agc	tcg	gac	2761
Pro	Pro	Gly	Ala	Arg	Ser	Leu	Thr	Pro	Cys	Thr	Cys	Gly	Ser	Ser	Asp	
				305		310				315			320			
ctt	tac	ttg	gtc	acg	aag	cat	gcc	gat	gtc	att	ccg	gtg	cgc	cgf	cgf	2809
Leu	Tyr	Leu	Val	Thr	Lys	His	Ala	Asp	Val	Ile	Pro	Val	Arg	Arg	Arg	
				325		330						335				
ggc	gac	agc	agg	ggg	agc	cta	ctc	tcc	ccc	cgf	ccc	gtc	tcc	tac	ttg	2857
Gly	Asp	Ser	Arg	Gly	Ser	Leu	Leu	Ser	Pro	Arg	Pro	Val	Ser	Tyr	Leu	
				340		345					350					
aag	ggc	tct	tcg	ggc	ggf	cca	ctg	ctc	tgc	ccc	tcg	ggg	cac	gct	gtg	2905
Lys	Gly	Ser	Ser	Gly	Gly	Pro	Leu	Leu	Cys	Pro	Ser	Gly	His	Ala	Val	
				355		360				365						
ggc	atc	ttt	cgg	gct	gcc	gtg	tgc	acc	cga	ggg	gtt	gcf	aag	gcf	gtg	2953
Gly	Ile	Phe	Arg	Ala	Ala	Val	Cys	Thr	Arg	Gly	Val	Ala	Lys	Ala	Val	
				370		375				380						
gac	ttt	gta	ccc	gtc	gag	tct	atg	gaa	acc	act	atg	cgf	tcc	ccg	gtc	3001
Asp	Phe	Val	Pro	Val	Glu	Ser	Met	Glu	Thr	Thr	Met	Arg	Ser	Pro	Val	
				385		390				395		400				
ttc	acg	gac	aac	tcg	tcc	cct	ccg	gcc	gta	ccg	cag	aca	tcc	cag	gtg	3049
Phe	Thr	Asp	Asn	Ser	Ser	Pro	Pro	Ala	Val	Pro	Gln	Thr	Phe	Gln	Val	
				405		410						415				
gcc	cat	cta	cac	gcc	cct	act	ggf	agc	ggc	aag	agc	act	aag	gtg	ccg	3097
Ala	His	Leu	His	Ala	Pro	Thr	Gly	Ser	Gly	Lys	Ser	Thr	Lys	Val	Pro	
				420		425					430					
gct	gcf	tat	gca	gcc	caa	ggg	tat	aag	gtg	ctt	gtc	ctg	aac	ccg	tcc	3145
Ala	Ala	Tyr	Ala	Ala	Gln	Gly	Tyr	Lys	Val	Leu	Val	Leu	Asn	Pro	Ser	
				435		440					445					
gtc	gcc	gcc	acc	cta	ggf	ttc	ggg	gcf	tat	atg	tct	aag	gca	cat	ggf	3193
Val	Ala	Ala	Thr	Leu	Gly	Phe	Gly	Ala	Tyr	Met	Ser	Lys	Ala	His	Gly	
				450		455					460					

atc gac cct aac atc aga acc ggg gta agg acc atc acc acg ggt gcc Ile Asp Pro Asn Ile Arg Thr Gly Val Arg Thr Ile Thr Thr Gly Ala 465 470 475 480	3241
ccc atc acg tac tcc acc tat ggc aag ttt ctt gcc gac ggt ggt tgc Pro Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly Cys 485 490 495	3289
tct ggg ggc gcc tat gac atc ata ata tgt gat gag tgc cac tca act Ser Gly Gly Ala Tyr Asp Ile Ile Cys Asp Glu Cys His Ser Thr 500 505 510	3337
gac tcg acc act atc ctg ggc atc ggc aca gtc ctg gac caa gcg gag Asp Ser Thr Thr Ile Leu Gly Ile Gly Thr Val Leu Asp Gln Ala Glu 515 520 525	3385
acg gct gga gcg cga ctc gtc gtg ctc gcc acc gct acg cct ccg gga Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr Ala Thr Pro Pro Gly 530 535 540	3433
tcg gtc acc gtg cca cat cca aac atc gag gag gtg gct ctg tcc agc Ser Val Thr Val Pro His Pro Asn Ile Glu Glu Val Ala Leu Ser Ser 545 550 555 560	3481
act gga gaa atc ccc ttt tat ggc aaa gcc atc ccc atc gag acc atc Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Ile Glu Thr Ile 565 570 575	3529
aag ggg ggg agg cac ctc att ttc tgc cat tcc aag aag aaa tgc gat Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp 580 585 590	3577
gag ctc gcc gcg aag ctg tcc ggc ctc gga ctc aat gct gta gca tat Glu Leu Ala Ala Lys Leu Ser Gly Leu Gly Leu Asn Ala Val Ala Tyr 595 600 605	3625
tac cgg ggc ctt gat gta tcc gtc ata cca act agc gga gac gtc att Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp Val Ile 610 615 620	3673
gtc gta gca acg gac gct cta atg acg ggc ttt acc ggc gat ttc gac Val Val Ala Thr Asp Ala Leu Met Thr Gly Phe Thr Gly Asp Phe Asp 625 630 635 640	3721
tca gtg atc gac tgc aat aca tgt gtc acc cag aca gtc gac ttc agc Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser 645 650 655	3769
ctg gac ccg acc ttc acc att gag acg acg acc gtc cca caa gac gcg Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Val Pro Gln Asp Ala 660 665 670	3817
gtg tca cgc tcg cag cgg cga ggc agg act ggt agg ggc agg atg ggc Val Ser Arg Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Met Gly 675 680 685	3865

att tac agg ttt gtg act cca gga gaa cgg ccc tcg ggc atg ttc gat Ile Tyr Arg Phe Val Thr Pro Gly Glu Arg Pro Ser Gly Met Phe Asp 690 695 700	3913
tcc tcg gtt ctg tgc gag tgc tat gac gcg ggc tgt gct tgg tac gag Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu 705 710 715 720	3961
ctc acg ccc gcc gag acc tca gtt agg ttg cgg gct tac cta aac aca Leu Thr Pro Ala Glu Thr Ser Val Arg Leu Arg Ala Tyr Leu Asn Thr 725 730 735	4009
cca ggg ttg ccc gtc tgc cag gac cat ctg gag ttc tgg gag ggc gtc Pro Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Gly Val 740 745 750	4057
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tgc gcc agg gct cag gct cca cct cca tcg tgg gac caa atg tgg aag Cys Ala Arg Ala Gln Ala Pro Pro Pro Ser Trp Asp Gln Met Trp Lys 785 790 795 800	4201
tgt ctc ata cgg cta aag cct acg ctg cac ggg cca acg ccc ctg ctg Cys Leu Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu 805 810 815	4249
tat agg ctg gga gcc gtt caa aac gag gtt act acc aca cac ccc ata Tyr Arg Leu Gly Ala Val Gln Asn Glu Val Thr Thr His Pro Ile 820 825 830	4297
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gga agg ccg gcc atc att ccc gac agg gaa gtc ctt tac cgg gag ttc Gly Arg Pro Ala Ile Ile Pro Asp Arg Glu Val Leu Tyr Arg Glu Phe 885 890 895	4489
gat gag atg gaa gag tgt gcc tca cac ctc cct tac atc gaa cag gga Asp Glu Met Glu Glu Cys Ala Ser His Leu Pro Tyr Ile Glu Gln Gly	4537

900	905	910	
atg cag ctc gcc gaa caa ttc aaa cag aag gca atc ggg ttg ctg caa Met Gln Ala Glu Gln Phe Lys Gln Lys Ala Ile Gly Leu Leu Gln	915	920	4585
		925	
aca gcc acc aag caa gcg gag gct gct ccc gtg gtg gaa tcc aag Thr Ala Thr Lys Gln Ala Glu Ala Ala Pro Val Val Glu Ser Lys	930	935	4633
		940	
tgg cg acc ctc gaa gcc ttc tgg gcg aag cat atg tgg aat ttc atc Trp Arg Thr Leu Glu Ala Phe Trp Ala Lys His Met Trp Asn Phe Ile	945	950	4681
		955	
		960	
agc ggg ata caa tat tta gca ggc ttg tcc act ctg cct ggc aac ccc Ser Gly Ile Gln Tyr Leu Ala Gly Leu Ser Thr Leu Pro Gly Asn Pro	965	970	4729
		975	
gcg ata gca tca ctg atg gca ttc aca gcc tct atc acc agc ccg ctc Ala Ile Ala Ser Leu Met Ala Phe Thr Ala Ser Ile Thr Ser Pro Leu	980	985	4777
		990	
acc acc caa cat acc ctc ctg ttt aac atc ctg ggg gga tgg gtg gcc Thr Thr Gln His Thr Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Ala	995	1000	4825
		1005	
gcc caa ctt gct cct ccc agc gct tcc gct ttc gta ggc gcc ggc Ala Gln Leu Ala Pro Pro Ser Ala Ala Ser Ala Phe Val Gly Ala Gly	1010	1015	4873
		1020	
atc gct gga gcg gct gtt ggc agc ata ggc ctt ggg aag gtg ctt gtg Ile Ala Gly Ala Ala Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val	1025	1030	4921
		1035	
		1040	
gat att ttg gca ggt tat gga gca ggg gtg gca ggc gcg ctc gtg gcc Asp Ile Leu Ala Gly Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala	1045	1050	4969
		1055	
ttt aag gtc atg agc ggc gag atg ccc tcc acc gag gac ctg gtt aac Phe Lys Val Met Ser Gly Glu Met Pro Ser Thr Glu Asp Leu Val Asn	1060	1065	5017
		1070	
cta ctc cct gct atc ctc tcc cct ggc gcc cta gtc gtc ggg gtc gtg Leu Leu Pro Ala Ile Leu Ser Pro Gly Ala Leu Val Val Gly Val Val	1075	1080	5065
		1085	
tgc gca gcg ata ctg cgt cgg cac gtg ggc cca ggg gag ggg gct gtg Cys Ala Ala Ile Leu Arg Arg His Val Gly Pro Gly Glu Gly Ala Val	1090	1095	5113
		1100	
cag tgg atg aac cgg ctg ata gcg ttc gct tcg cgg ggt aac cac gtc Gln Trp Met Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val	1105	1110	5161
		1115	
		1120	
tcc ccc acg cac tat gtg cct gag agc gac gct gca gca cgt gtc act			5209

Ser Pro Thr His Tyr Val Pro Glu Ser Asp Ala Ala Ala Arg Val Thr			
1125	1130	1135	
cag atc ctc tct agt ctt acc atc act cag ctg ctg aag agg ctt cac			5257
Gln Ile Leu Ser Ser Leu Thr Ile Thr Gln Leu Leu Lys Arg Leu His			
1140	1145	1150	
cag tgg atc aac gag gac tgc tcc acg cca tgc tcc ggc tcg tgg cta			5305
Gln Trp Ile Asn Glu Asp Cys Ser Thr Pro Cys Ser Gly Ser Trp Leu			
1155	1160	1165	
aga gat gtt tgg gat tgg ata tgc acg gtg ttg act gat ttc aag gcc			5353
Arg Asp Val Trp Asp Trp Ile Cys Thr Val Leu Thr Asp Phe Lys Ala			
1170	1175	1180	
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Trp Leu Gln Ser Lys Leu Leu Pro Arg Leu Pro Gly Val Pro Phe Phe			
1185	1190	1195	1200
tca tgt caa cgt ggg tac aag gga gtc tgg ccg ggc gac ggc atc atg			5449
Ser Cys Gln Arg Gly Tyr Lys Gly Val Trp Arg Gly Asp Gly Ile Met			
1205	1210	1215	
caa acc acc tgc cca tgt gga gca cag atc acc gga cat gtg aaa aac			5497
Gln Thr Thr Cys Pro Cys Gly Ala Gln Ile Thr Gly His Val Lys Asn			
1220	1225	1230	
tgt tcc atg agg atc gtg ggg cct agg acc tgt agt aac acg tgg cat			5545
Cys Ser Met Arg Ile Val Gly Pro Arg Thr Cys Ser Asn Thr Trp His			
1235	1240	1245	
gga aca ttc ccc att aac gcg tac acc acg ggc ccc tgc acg ccc tcc			5593
Gly Thr Phe Pro Ile Asn Ala Tyr Thr Thr Gly Pro Cys Thr Pro Ser			
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ccg gcg cca aat tat tct agg gcg ctg tgg ccg gtg gct gct gag gag			5641
Pro Ala Pro Asn Tyr Ser Arg Ala Leu Trp Arg Val Ala Ala Glu Glu			
1265	1270	1275	1280
tac gtg gag gtt acg cga gtg ggg gat ttc cac tac gtg acg ggc atg			5689
Tyr Val Glu Val Thr Arg Val Gly Asp Phe His Tyr Val Thr Gly Met			
1285	1290	1295	
acc act gac aac gta aag tgc ccg tgt cag gtt ccg gcc ccc gaa ttc			5737
Thr Thr Asp Asn Val Lys Cys Pro Cys Gln Val Pro Ala Pro Glu Phe			
1300	1305	1310	
ttc aca gaa gtg gat ggg gtg ccg ttg cac agg tac gct cca gcg tgc			5785
Phe Thr Glu Val Asp Gly Val Arg Leu His Arg Tyr Ala Pro Ala Cys			
1315	1320	1325	
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Lys Pro Leu Leu Arg Glu Glu Val Thr Phe Leu Val Gly Leu Asn Gln			
1330	1335	1340	

tac ccg gtt ggg tca cag ctc cca tgc gag ccc gaa ctg gac gta gca		5881
Tyr Pro Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Leu Asp Val Ala		
1345 1350 1355 1360		
gtg ctc act tcc atg ctc acc gac ccc tcc cac att acg gcg gag acg		5929
Val Leu Thr Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr		
1365 1370 1375		
gct aag cgt agg ctg gcc agg gga tct ccc ccc tcc ttg gcc agc tca		5977
Ala Lys Arg Arg Leu Ala Arg Gly Ser Pro Pro Ser Leu Ala Ser Ser		
1380 1385 1390		
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Ser Ala Ser Gln Leu Ser Ala Pro Ser Leu Lys Ala Thr Cys Thr Thr		
1395 1400 1405		
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Arg His Asp Ser Pro Asp Ala Asp Leu Ile Glu Ala Asn Leu Leu Trp		
1410 1415 1420		
cgg cag gag atg ggc ggg aac atc acc cgc gtg gag tca gag aat aag		6121
Arg Gln Glu Met Gly Gly Asn Ile Thr Arg Val Glu Ser Glu Asn Lys		
1425 1430 1435 1440		
gta gta att ttg gac tct ttc gag ccg ctc caa gcg gag gag gat gag		6169
Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp Glu		
1445 1450 1455		
agg gaa gta tcc gtt ccg gcg gag atc ctg cgg agg tcc agg aaa ttc		6217
Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe		
1460 1465 1470		
cct cga gcg atg ccc ata tgg gca cgc ccg gat tac aac cct cca ctg		6265
Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro Leu		
1475 1480 1485		
tta gag tcc tgg aag gac ccg gac tac gtc cct cca gtg gta cac ggg		6313
Leu Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His Gly		
1490 1495 1500		
tgt cca ttg ccg cct gcc aag gcc cct ccg ata cca cct cca cgg agg		6361
Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Ile Pro Pro Pro Arg Arg		
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aag agg acg gtt gtc ctg tca gaa tct acc gtg tct tct gcc ttg gcg		6409
Lys Arg Thr Val Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu Ala		
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Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val Asp		
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agc ggc acg gca acg gcc tct cct gac cag ccc tcc gac gac ggc gac		6505
Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly Asp		
1555 1560 1565		

gcg gga tcc gac gtt gag tcg tac tcc tcc atg ccc ccc ctt gag ggg Ala Gly Ser Asp Val Glu Ser Tyr Ser Ser Met Pro Pro Leu Glu Gly 1570 1575 1580	6553
gag ccg ggg gat ccc gat ctc agc gac ggg tct tgg tct acc gta agc Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Ser Trp Ser Thr Val Ser 1585 1590 1595 1600	6601
gag gag gct agt gag gac gtc gtc tgc tcg atg tcc tac aca tgg Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr Trp 1605 1610 1615	6649
aca ggc gcc ctg atc acg cca tgc gct gcg gag gaa acc aag ctg ccc Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu Pro 1620 1625 1630	6697
atc aat gca ctg agc aac tct ttg ctc cgt cac cac aac ttg gtc tat Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val Tyr 1635 1640 1645	6745
gct aca aca tct cgc agc gca agc ctg cgg cag aag aag gtc acc ttt Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr Phe 1650 1655 1660	6793
gac aga ctg cag gtc ctg gac gac cac tac cgg gac gtg ctc aag gag Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu 1665 1670 1675 1680	6841
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gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt ggc Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly 1700 1705 1710	6937
tat ggg gca aag gac gtc cgg aac cta tcc agc aag gcc gtt aac cac Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His 1715 1720 1725	6985
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aag ggg ggc cgc aag cca gct cgc ctt atc gta ttc cca gat ttg ggg Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu Gly 1765 1770 1775	7129
gtt cgt gtg tgc gag aaa atg gcc ctt tac gat gtg gtc tcc acc ctc Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu	7177

1780	1785	1790	
cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct gga Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly 1795	1800	1805	7225
cag cgg gtc gag ttc ctg gtg aat gcc tgg aaa gcg aag aaa tgc cct Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro 1810	1815	1820	7273
atg ggc ttc gca tat gac acc cgc tgt ttt gac tca acg gtc act gag Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu 1825	1830	1835	7321
aat gac atc cgt gtt gag gag tca atc tac caa tgt tgt gac ttg gcc Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala 1845	1850	1855	7369
ccc gaa gcc aga cag gcc ata agg tcg ctc aca gag cgg ctt tac atc Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile 1860	1865	1870	7417
ggg ggc ccc ctg act aat tct aaa ggg cag aac tgc ggc tat cgc cgg Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg 1875	1880	1885	7465
tgc cgc gcg agc ggt gta ctg acg acc agc tgc ggt aat acc ctc aca Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr 1890	1895	1900	7513
tgt tac ttg aag gcc gct gcg gcc tgt cga gct gcg aag ctc cag gac Cys Tyr Leu Lys Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp 1905	1910	1915	7561
tgc acg atg ctc gta tgc gga gac gac ctt gtc gtt atc tgt gaa agc Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser 1925	1930	1935	7609
gcg ggg acc caa gag gac gag gcg agc cta cgg gcc ttc acg gag gct Ala Gly Thr Gln Glu Asp Glu Ala Ser Leu Arg Ala Phe Thr Glu Ala 1940	1945	1950	7657
atg act aga tac tct gcc ccc cct ggg gac ccg ccc aaa cca gaa tac Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp Pro Pro Lys Pro Glu Tyr 1955	1960	1965	7705
gac ttg gag ttg ata aca tca tgc tcc tcc aat gtg tca gtc gcg cac Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser Asn Val Ser Val Ala His 1970	1975	1980	7753
gat gca tct ggc aaa agg gtg tac tat ctc acc cgt gac ccc acc acc Asp Ala Ser Gly Lys Arg Val Tyr Tyr Leu Thr Arg Asp Pro Thr Thr 1985	1990	1995	7801
ccc ctt gcg cgg gct gcg tgg gag aca gct aga cac act cca gtc aat			7849

Pro	Leu	Ala	Arg	Ala	Ala	Trp	Glu	Thr	Ala	Arg	His	Thr	Pro	Val	Asn
2005									2010						2015
tcc tgg cta ggc aac atc atc atg tat gcg ccc acc ttg tgg gca agg															7897
Ser	Trp	Leu	Gly	Asn	Ile	Ile	Met	Tyr	Ala	Pro	Thr	Leu	Trp	Ala	Arg
2020								2025							2030
atg atc ctg atg act cat ttc ttc atc ctt cta gct cag gaa caa															7945
Met	Ile	Leu	Met	Thr	His	Phe	Phe	Ser	Ile	Leu	Leu	Ala	Gln	Glu	Gln
2035								2040							2045
ctt gaa aaa gcc cta gat tgt cag atc tac ggg gcc tgt tac tcc att															7993
Leu	Glu	Lys	Ala	Leu	Asp	Cys	Gln	Ile	Tyr	Gly	Ala	Cys	Tyr	Ser	Ile
2050								2055							2060
gag cca ctt gac cta cct cag atc att caa cga ctc cac ggc ctt agc															8041
Glu	Pro	Leu	Asp	Leu	Pro	Gln	Ile	Ile	Gln	Arg	Leu	His	Gly	Leu	Ser
2065								2070							2080
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Ala	Phe	Ser	Leu	His	Ser	Tyr	Ser	Pro	Gly	Glu	Ile	Asn	Arg	Val	Ala
2085								2090							2095
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Ser	Cys	Leu	Arg	Lys	Leu	Gly	Val	Pro	Pro	Leu	Arg	Val	Trp	Arg	His
2100								2105							2110
cg <sup>g</sup> gcc aga agt gtc cgc gct agg cta ctg tcc cag ggg ggg agg gct															8185
Arg	Ala	Arg	Ser	Val	Arg	Ala	Arg	Leu	Leu	Ser	Gln	Gly	Gly	Arg	Ala
2115								2120							2125
gcc act tgt ggc aag tac ctc ttc aac tgg gca gta agg acc aag ctc															8233
Ala	Thr	Cys	Gly	Lys	Tyr	Leu	Phe	Asn	Trp	Ala	Val	Arg	Thr	Lys	Leu
2130								2135							2140
aaa ctc act cca atc ccg gct gcg tcc cag ttg gat tta tcc agc tgg															8281
Lys	Leu	Thr	Pro	Ile	Pro	Ala	Ala	Ser	Gln	Leu	Asp	Leu	Ser	Ser	Trp
2145								2150							2160
ttc gtt gct ggt tac agc ggg gga gac ata tat cac agc ctg tct cgt															8329
Phe	Val	Ala	Gly	Tyr	Ser	Gly	Gly	Asp	Ile	Tyr	His	Ser	Leu	Ser	Arg
2165								2170							2175
gcc cga ccc cgc tgg ttc atg tgg tgc cta ctc cta ctt tct gta ggg															8377
Ala	Arg	Pro	Arg	Trp	Phe	Met	Trp	Cys	Leu	Leu	Leu	Ser	Val	Gly	
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gta ggc atc tat cta ctc ccc aac cga tga acggggagct aaacactcca															8427
Val	Gly	Ile	Tyr	Leu	Leu	Pro	Asn	Arg	*						
2195								2200							
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ccatcttagc	cctagtcacg	gctagctgt	aaaggccgt	gagccgctt	actgcagaga										8607
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 Met Asp Arg Glu Met Ala Ala Ser Cys Gly Gly Ala Val Phe Val Gly  
 1 5 10 15

ctg	ata	ctc	ttg	acc	ttg	tca	ccg	cac	tat	aag	ctg	ttc	ctc	gct	agg	1897
Leu	Ile	Leu	Leu	Thr	Leu	Ser	Pro	His	Tyr	Lys	Leu	Phe	Leu	Ala	Arg	
			20							25					30	

ctc	ata	tgg	tgg	tta	caa	tat	ttt	atc	acc	agg	gcc	gag	gca	cac	ttg	1945
Leu	Ile	Trp	Trp	Leu	Gln	Tyr	Phe	Ile	Thr	Arg	Ala	Glu	Ala	His	Leu	
			35					40				45				

caa	gtg	tgg	atc	ccc	ccc	ctc	aac	gtt	cg	gg	gg	gc	cg	gat	gcc	gtc	1993
Gln	Val	Trp	Ile	Pro	Pro	Leu	Asn	Val	Arg	Gly	Gly	Arg	Arg	Asp	Ala	Val	
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atc	ctc	ctc	acg	tgc	g	atc	cac	cca	gag	cta	atc	ttt	acc	atc	acc	2041
Ile	Leu	Leu	Thr	Cys	Ala	Ile	His	Pro	Glu	Leu	Ile	Phe	Thr	Ile	Thr	
			65					70			75				80	

aaa	atc	ttg	ctc	gcc	ata	ctc	ggt	cca	ctc	atg	gtg	ctc	cag	gct	gg	2089
Lys	Ile	Leu	Leu	Ala	Ile	Leu	Gly	Pro	Leu	Met	Val	Leu	Gln	Ala	Gly	
			85					90				95				

ata	acc	aaa	gtg	ccg	tac	ttc	gtg	cg	gca	cac	gg	gg	ctc	att	cg	gca	2137
Ile	Thr	Lys	Val	Pro	Tyr	Phe	Val	Arg	Ala	His	Gly	Leu	Ile	Arg	Ala		
			100					105				110					

tgc	atg	ctg	gtg	cg	aag	gtt	gct	gg	gg	cat	at	gt	ct	caa	at	g	2185
Cys	Met	Leu	Val	Arg	Lys	Val	Ala	Gly	Gly	His	Tyr	Val	Gln	Met	Ala		
			115					120			125						

ctc	atg	aag	ttg	gcc	gca	ctg	aca	ggt	ac	tg	tt	at	gac	cat	ctc	2233
Leu	Met	Lys	Leu	Ala	Ala	Leu	Thr	Gly	Thr	Tyr	Val	Tyr	Asp	His	Leu	
			130					135			140					

acc	cca	ctg	cg	gac	tgg	gcc	cac	g	cg	gg	ct	cg	gt	gt	2281	
Thr	Pro	Leu	Arg	Asp	Trp	Ala	His	Ala	Gly	Leu	Arg	Asp	Leu	Ala	Val	
			145					150			155			160		

gca	gtt	gag	ccc	gtc	gtc	ttc	tct	gat	at	g	acc	aag	gtt	atc	acc	2329
Ala	Val	Glu	Pro	Val	Val	Phe	Ser	Asp	Met	Glu	Thr	Lys	Val	Ile	Thr	
			165					170			175					

tgg	ggg	gca	gac	acc	g	cg	g	cg	tgt	gg	gac	atc	atc	ttg	ggc	ctg	ccc	2377

Trp	Gly	Ala	Asp	Thr	Ala	Ala	Cys	Gly	Asp	Ile	Ile	Leu	Gly	Leu	Pro	
180																190
gtc	tcc	gcc	cgc	agg	ggg	agg	gag	ata	cat	ctg	gga	ccg	gca	gac	agc	2425
Val	Ser	Ala	Arg	Arg	Gly	Arg	Glu	Ile	His	Leu	Gly	Pro	Ala	Asp	Ser	
195																205
ctt	gaa	ggg	cag	ggg	tgg	cga	ctc	ctc	gcg	cct	att	acg	gcc	tac	tcc	2473
Leu	Glu	Gly	Gln	Gly	Trp	Arg	Leu	Leu	Ala	Pro	Ile	Thr	Ala	Tyr	Ser	
210																220
caa	cag	acg	cga	ggc	cta	ctt	ggc	tgc	atc	atc	act	agc	ctc	aca	ggc	2521
Gln	Gln	Thr	Arg	Gly	Leu	Leu	Gly	Cys	Ile	Ile	Thr	Ser	Leu	Thr	Gly	
225																240
cgg	gac	agg	aac	cag	gtc	gag	ggg	gag	gtc	caa	gtg	gtc	tcc	acc	gca	2569
Arg	Asp	Arg	Asn	Gln	Val	Glu	Gly	Glu	Val	Gln	Val	Val	Ser	Thr	Ala	
245																255
aca	caa	tct	ttc	ctg	gcg	acc	tgc	gtc	aat	ggc	gtg	tgt	tgg	act	gtc	2617
Thr	Gln	Ser	Phe	Leu	Ala	Thr	Cys	Val	Asn	Gly	Val	Cys	Trp	Thr	Val	
260																270
tat	cat	ggt	gcc	ggc	tca	aag	acc	ctt	gcc	ggc	cca	aag	ggc	cca	atc	2665
Tyr	His	Gly	Ala	Gly	Ser	Lys	Thr	Leu	Ala	Gly	Pro	Lys	Gly	Pro	Ile	
275																285
acc	caa	atg	tac	acc	aat	gtg	gac	cag	gac	ctc	gtc	ggc	tgg	caa	gcg	2713
Thr	Gln	Met	Tyr	Thr	Asn	Val	Asp	Gln	Asp	Leu	Val	Gly	Trp	Gln	Ala	
290																300
ccc	ccc	ggg	gcg	cgt	tcc	ttg	aca	cca	tgc	acc	tgc	ggc	agc	tcg	gac	2761
Pro	Pro	Gly	Ala	Arg	Ser	Leu	Thr	Pro	Cys	Thr	Cys	Gly	Ser	Ser	Asp	
305																320
ctt	tac	ttg	gtc	acg	agg	cat	gcc	gat	gtc	att	ccg	gtg	cgc	cgg	cgg	2809
Leu	Tyr	Leu	Val	Thr	Arg	His	Ala	Asp	Val	Ile	Pro	Val	Arg	Arg	Arg	
325																335
ggc	gac	agc	agg	ggg	agc	cta	ctc	tcc	ccc	agg	ccc	gtc	tcc	tac	ttg	2857
Gly	Asp	Ser	Arg	Gly	Ser	Leu	Leu	Ser	Pro	Arg	Pro	Val	Ser	Tyr	Leu	
340																350
aag	ggc	tct	tcg	ggc	ggt	cca	ctg	ctc	tgc	ccc	tcg	ggg	cac	gct	gtg	2905
Lys	Gly	Ser	Ser	Gly	Gly	Pro	Leu	Leu	Cys	Pro	Ser	Gly	His	Ala	Val	
355																365
ggc	atc	ttt	cgg	gct	gcc	gtg	tgc	acc	cga	ggg	gtt	gct	aag	gct	gtg	2953
Gly	Ile	Phe	Arg	Ala	Ala	Val	Cys	Thr	Arg	Gly	Val	Ala	Lys	Ala	Val	
370																380
gac	ttt	gta	ccc	gtc	gag	tct	atg	gaa	acc	act	atg	cg	tcc	ccg	gtc	3001
Asp	Phe	Val	Pro	Val	Glu	Ser	Met	Glu	Thr	Thr	Met	Arg	Ser	Pro	Val	
385																400

ttc acg gac aac tcg tcc cct ccg gcc gta ccg cag aca ttc cag gtg Phe Thr Asp Asn Ser Ser Pro Pro Ala Val Pro Gln Thr Phe Gln Val	3049
405 410 415	
gcc cat cta cac gcc cct act ggt agc ggc aag agc act aag gtg ccg Ala His Leu His Ala Pro Thr Gly Ser Gly Lys Ser Thr Lys Val Pro	3097
420 425 430	
gct gcg tat gca gcc caa ggg tat aag gtg ctt gtc ctg aac ccg tcc Ala Ala Tyr Ala Ala Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser	3145
435 440 445	
gtc gcc gcc acc cta ggt ttc ggg gcg tat atg tct aag gca cat ggt Val Ala Ala Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Ala His Gly	3193
450 455 460	
atc gac cct aac atc aga acc ggg gta agg acc atc acc acg ggt gcc Ile Asp Pro Asn Ile Arg Thr Gly Val Arg Thr Ile Thr Thr Gly Ala	3241
465 470 475 480	
ccc atc acg tac tcc acc tat ggc aag ttt ctt gcc gac ggt ggt tgc Pro Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly Cys	3289
485 490 495	
tct ggg ggc gcc tat gac atc ata ata tgt gat gag tgc cac tca act Ser Gly Gly Ala Tyr Asp Ile Ile Ile Cys Asp Glu Cys His Ser Thr	3337
500 505 510	
gac tcg acc act atc ctg ggc atc ggc aca gtc ctg gac caa gcg gag Asp Ser Thr Thr Ile Leu Gly Ile Gly Thr Val Leu Asp Gln Ala Glu	3385
515 520 525	
acg gct gga gcg cga ctc gtc gtg ctc gcc acc gct acg cct ccg gga Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr Ala Thr Pro Pro Gly	3433
530 535 540	
tcg gtc acc gtg cca cat cca aac atc gag gag gtg gct ctg tcc agc Ser Val Thr Val Pro His Pro Asn Ile Glu Glu Val Ala Leu Ser Ser	3481
545 550 555 560	
act gga gaa atc ccc ttt tat ggc aaa gcc atc ccc atc gag acc atc Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Ile Glu Thr Ile	3529
565 570 575	
aag ggg ggg agg cac ctc att ttc tgc cat tcc aag aag aaa tgt gat Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp	3577
580 585 590	
gag ctc gcc gcg aag ctg tcc ggc ctc gga ctc aat gct gta gca tat Glu Leu Ala Ala Lys Leu Ser Gly Leu Gly Leu Asn Ala Val Ala Tyr	3625
595 600 605	
tac cggtt gat gta tcc gtc ata cca act agc gga gac gtc att Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp Val Ile	3673
610 615 620	

gtc gta gca acg gac gct cta atg acg ggc ttt acc ggc gat ttc gac Val Val Ala Thr Asp Ala Leu Met Thr Gly Phe Thr Gly Asp Phe Asp	3721
625 630 635 640	
tca gtg atc gac tgc aat aca tgt gtc acc cag aca gtc gac ttc agc Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser	3769
645 650 655	
ctg gac ccg acc ttc acc att gag acg acg acc gtg cca caa gac gcg Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Val Pro Gln Asp Ala	3817
660 665 670	
gtg tca cgc tcg cag cgg cga ggc agg act ggt agg ggc agg atg ggc Val Ser Arg Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Met Gly	3865
675 680 685	
att tac agg ttt gtg act cca gga gaa cgg ccc tcg ggc atg ttc gat Ile Tyr Arg Phe Val Thr Pro Gly Glu Arg Pro Ser Gly Met Phe Asp	3913
690 695 700	
tcc tcg gtt ctg tgc gag tgc tat gac gcg ggc tgt gct tgg tac gag Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu	3961
705 710 715 720	
ctc acg ccc gcc gag acc tca gtt agg ttg cgg gct tac cta aac aca Leu Thr Pro Ala Glu Thr Ser Val Arg Leu Arg Ala Tyr Leu Asn Thr	4009
725 730 735	
cca ggg ttg ccc gtc tgc cag gac cat ctg gag ttc tgg gag agc gtc Pro Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Ser Val	4057
740 745 750	
ttt aca ggc ctc acc cac ata gac gcc cat ttc ttg tcc cag act aag Phe Thr Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys	4105
755 760 765	
cag gca gga gac aac ttc ccc tac ctg gta gca tac cag gct acg gtg Gln Ala Gly Asp Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val	4153
770 775 780	
tgc gcc agg gct cag gct cca cct cca tcg tgg gac caa atg tgg aag Cys Ala Arg Ala Gln Ala Pro Pro Ser Trp Asp Gln Met Trp Lys	4201
785 790 795 800	
tgt ctc ata cgg cta aag cct acg ctg cac ggg cca acg ccc ctg ctg Cys Leu Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu	4249
805 810 815	
tat agg ctg gga gcc gtt caa aac gag gtt act acc aca cac ccc ata Tyr Arg Leu Gly Ala Val Gln Asn Glu Val Thr Thr His Pro Ile	4297
820 825 830	
acc aaa tac atc atg gca tgc atg tcg gct gac ctg gag gtc gtc acg Thr Lys Tyr Ile Met Ala Cys Met Ser Ala Asp Leu Glu Val Val Thr	4345

835	840	845	
agc acc tgg ctg gta ggc gga gtc cta gca gct ctg gcc gcg tat Ser Thr Trp Val Leu Val Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr 850	855	860	4393
tgc ctg aca aca ggc agc gtg gtc att gtg ggc agg atc atc ttg tcc Cys Leu Thr Thr Gly Ser Val Val Ile Val Gly Arg Ile Ile Leu Ser 865	870	875	4441
gga aag ccg gcc atc att ccc gac agg gaa gtc ctt tac cgg gag ttc Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu Val Leu Tyr Arg Glu Phe 885	890	895	4489
gat gag atg gaa gag tgc gcc tca cac ctc cct tac atc gaa cag gga Asp Glu Met Glu Glu Cys Ala Ser His Leu Pro Tyr Ile Glu Gln Gly 900	905	910	4537
atg cag ctc gcc gaa caa ttc aaa cag aag gca atc ggg ttg ctg caa Met Gln Leu Ala Glu Gln Phe Lys Gln Lys Ala Ile Gly Leu Leu Gln 915	920	925	4585
aca gcc acc aag caa gcg gag gct gct ccc gtg gtg gaa tcc aag Thr Ala Thr Lys Gln Ala Glu Ala Ala Pro Val Val Glu Ser Lys 930	935	940	4633
tgg cg acc ctc gaa gcc ttc tgg gcg aag cat atg tgg aat ttc atc Trp Arg Thr Leu Glu Ala Phe Trp Ala Lys His Met Trp Asn Phe Ile 945	950	955	4681
agc ggg ata caa tat tta gca ggc ttg tcc act ctg cct ggc aac ccc Ser Gly Ile Gln Tyr Leu Ala Gly Leu Ser Thr Leu Pro Gly Asn Pro 965	970	975	4729
gcg ata gca tca ctg atg gca ttc aca gcc tct atc acc agc ccg ctc Ala Ile Ala Ser Leu Met Ala Phe Thr Ala Ser Ile Thr Ser Pro Leu 980	985	990	4777
acc acc caa cat acc ctc ctg ttt aac atc ctg ggg gga tgg gtg gcc Thr Thr Gln His Thr Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Ala 995	1000	1005	4825
gcc caa ctt gct cct ccc agc gct gct tct gct ttc gta ggc gcc ggc Ala Gln Leu Ala Pro Pro Ser Ala Ala Ser Ala Phe Val Gly Ala Gly 1010	1015	1020	4873
atc gct gga gcg gct gtt ggc agc ata ggc ctt ggg aag gtg ctt gtg Ile Ala Gly Ala Ala Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val 1025	1030	1035	4921
gat att ttg gca ggt tat gga gca ggg gtg gca ggc gcg ctc gtg gcc Asp Ile Leu Ala Gly Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala 1045	1050	1055	4969
ttt aag gtc atg agc ggc gag atg ccc tcc acc gag gac ctg gtt aac			5017

Phe Lys Val Met Ser Gly Glu Met Pro Ser Thr Glu Asp Leu Val Asn			
1060	1065	1070	
cta ctc cct atc ctc tcc cct ggc gcc cta gtc gtc ggg gtc gtg	5065		
Leu Leu Pro Ala Ile Leu Ser Pro Gly Ala Leu Val Val Gly Val Val			
1075	1080	1085	
tgc gca gcg ata ctg cgt cggt cac gtc ggc cca ggg gag ggg gct gtg	5113		
Cys Ala Ala Ile Leu Arg Arg His Val Gly Pro Gly Glu Gly Ala Val			
1090	1095	1100	
cag tgg atg aac cgg ctg ata gcg ttc gct tcg cgg ggt aac cac gtc	5161		
Gln Trp Met Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val			
1105	1110	1115	1120
tcc ccc acg cac tat gtg cct gag agc gac gct gca gca cgt gtc act	5209		
Ser Pro Thr His Tyr Val Pro Glu Ser Asp Ala Ala Arg Val Thr			
1125	1130	1135	
cag atc ctc tct agt ctt acc atc act cag ctg ctg aag agg ctt cac	5257		
Gln Ile Leu Ser Ser Leu Thr Ile Thr Gln Leu Leu Lys Arg Leu His			
1140	1145	1150	
cag tgg atc aac gag gac tgc tcc acg cca tgc tcc ggc tcg tgg cta	5305		
Gln Trp Ile Asn Glu Asp Cys Ser Thr Pro Cys Ser Gly Ser Trp Leu			
1155	1160	1165	
aga gat gtt tgg gat tgg ata tgc acg gtg ttg act gat ttc aag acc	5353		
Arg Asp Val Trp Asp Trp Ile Cys Thr Val Leu Thr Asp Phe Lys Thr			
1170	1175	1180	
tgg ctc cag tcc aag ctc ctg ccg cga ttg ccg gga gtc ccc ttc ttc	5401		
Trp Leu Gln Ser Lys Leu Leu Pro Arg Leu Pro Gly Val Pro Phe Phe			
1185	1190	1195	1200
tca tgt caa cgt ggg tac aag gga gtc tgg ccg ggc gac ggc atc atg	5449		
Ser Cys Gln Arg Gly Tyr Lys Gly Val Trp Arg Gly Asp Gly Ile Met			
1205	1210	1215	
caa acc acc tgc cca tgt gga gca cag atc acc gga cat gtg aaa aac	5497		
Gln Thr Thr Cys Pro Cys Gly Ala Gln Ile Thr Gly His Val Lys Asn			
1220	1225	1230	
ggg tcc atg agg atc gtg ggg cct agg acc tgt agt aac acg tgg cat	5545		
Gly Ser Met Arg Ile Val Gly Pro Arg Thr Cys Ser Asn Thr Trp His			
1235	1240	1245	
gga aca ttc ccc att aac gcg tac acc acg ggc ccc tgc acg ccc tcc	5593		
Gly Thr Phe Pro Ile Asn Ala Tyr Thr Gly Pro Cys Thr Pro Ser			
1250	1255	1260	
ccg gcg cca aat tat tct agg gcg ctg tgg ccg gtg gct gct gag gag	5641		
Pro Ala Pro Asn Tyr Ser Arg Ala Leu Trp Arg Val Ala Ala Glu Glu			
1265	1270	1275	1280

tac gtg gag gtt acg cgg gtg ggg gat ttc cac tac gtg acg ggc atg Tyr Val Glu Val Thr Arg Val Gly Asp Phe His Tyr Val Thr Gly Met	1285	1290	1295	5689	
acc act gac aac gta aag tgc ccg tgt cag gtt ccg gcc ccc gaa ttc Thr Thr Asp Asn Val Lys Cys Pro Cys Gln Val Pro Ala Pro Glu Phe	1300	1305	1310	5737	
ttc aca gaa gtg gat ggg gtg ccg ttg cac agg tac gct cca gcg tgc Phe Thr Glu Val Asp Gly Val Arg Leu His Arg Tyr Ala Pro Ala Cys	1315	1320	1325	5785	
aaa ccc ctc cta cgg gag gag gtc aca ttc ctg gtc ggg ctc aat caa Lys Pro Leu Leu Arg Glu Glu Val Thr Phe Leu Val Gly Leu Asn Gln	1330	1335	1340	5833	
tac ctg gtt ggg tca cag ctc cca tgc gag ccc gaa ccg gac gta gca Tyr Leu Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Pro Asp Val Ala	1345	1350	1355	1360	5881
gtg ctc act tcc atg ctc acc gac ccc tcc cac att acg gcg gag acg Val Leu Thr Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr	1365	1370	1375	5929	
gct aag cgt agg ctg gcc agg gga tct ccc ccc tcc ttg gcc agc tca Ala Lys Arg Arg Leu Ala Arg Gly Ser Pro Pro Ser Leu Ala Ser Ser	1380	1385	1390	5977	
tca gct agc cag ctg tct gcg cct tcc ttg aag gca aca tgc act acc Ser Ala Ser Gln Leu Ser Ala Pro Ser Leu Lys Ala Thr Cys Thr Thr	1395	1400	1405	6025	
cgt cat gac tcc ccg gac gct gac ctc atc gag gcc aac ctc ctg tgg Arg His Asp Ser Pro Asp Ala Asp Leu Ile Glu Ala Asn Leu Leu Trp	1410	1415	1420	6073	
cgg cag gag atg ggc ggg aac atc acc cgc gtg gag tca gaa aat aag Arg Gln Glu Met Gly Gly Asn Ile Thr Arg Val Glu Ser Glu Asn Lys	1425	1430	1435	1440	6121
gta gta att ttg gac tct ttc gag ccg ctc caa gcg gag gag gat gag Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp Glu	1445	1450	1455	6169	
agg gaa gta tcc gtt ccg gcg gag atc ctg cgg agg tcc agg aaa ttc Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe	1460	1465	1470	6217	
cct cga gcg atg ccc ata tgg gca cgc ccg gat tac aac cct cca ctg Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro Leu	1475	1480	1485	6265	
tta gag tcc tgg aag gac ccg gac tac gtc cct cca gtg gta cac ggg Leu Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His Gly	1490	1495	1500	6313	

tgt cca ttg ccg cct gcc aag gcc cct ccg ata cca cct cca cgg agg	6361
Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Ile Pro Pro Pro Arg Arg	
1505 1510 1515 1520	
aag agg acg gtt gtc ctg tca gaa tct acc gtg tct tct gcc ttg gcg	6409
Lys Arg Thr Val Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu Ala	
1525 1530 1535	
;	
gag ctc gcc aca aag acc ttc ggc agc tcc gaa tcg tcg gcc gtc gac	6457
Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val Asp	
1540 1545 1550	
agc ggc acg gca acg gcc tct cct gac cag ccc tcc gac gac ggc gac	6505
Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly Asp	
1555 1560 1565	
gcg gga tcc gac gtt gag tcg tac tcc tcc atg ccc ccc ctt gag ggg	6553
Ala Gly Ser Asp Val Glu Ser Tyr Ser Ser Met Pro Pro Leu Glu Gly	
1570 1575 1580	
gag ccg ggg gat ccc gat ctc agc gac ggg tct tgg tct acc gta agc	6601
Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Ser Trp Ser Thr Val Ser	
1585 1590 1595 1600	
gag gag gct agt gag gac gtc gtc tgc tcg atg tcc tac aca tgg	6649
Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr Trp	
1605 1610 1615	
aca ggc gcc ctg atc acg cca tgc gct gcg gag gaa acc aag ctg ccc	6697
Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu Pro	
1620 1625 1630	
atc aat gca ctg agc aac tct ttg ctc cgt cac cac aac ttg gtc tat	6745
Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val Tyr	
1635 1640 1645	
gct aca aca tct cgc agc gca agc ctg cgg cag aag aag gtc acc ttt	6793
Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr Phe	
1650 1655 1660	
gac aga ctg cag gtc ctg gac cac tac cgg gac gtg ctc aag gag	6841
Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu	
1665 1670 1675 1680	
atg aag gcg aag gcg tcc aca gtt aag gct aaa ctt cta tcc gtg gag	6889
Met Lys Ala Lys Ala Ser Thr Val Lys Ala Lys Leu Leu Ser Val Glu	
1685 1690 1695	
gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt ggc	6937
Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly	
1700 1705 1710	
tat ggg gca aag gac gtc cgg aac cta tcc agc aag gcc gtt aac cac	6985
Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His	

1715	1720	1725	
atc cgc tcc gtg tgg aag gac ttg ctg gaa gac act gag aca cca att Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro Ile 1730	1735	1740	7033
gac acc acc atc atg gca aaa aat gag gtt ttc tgc gtc caa cca gag Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu 1745	1750	1755	7081
aag ggg ggc cgc aag cca gct cgc ctt atc gta ttc cca gat ttg ggg Lys Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu Gly 1765	1770	1775	7129
gtt cgt gtg tgc gag aaa atg gcc ctt tac gat gtg gtc tcc acc ctc Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu 1780	1785	1790	7177
cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct gga Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly 1795	1800	1805	7225
cag cgg gtc gag ttc ctg gtg aat gcc tgg aaa gcg aag aaa tgc cct Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro 1810	1815	1820	7273
atg ggc ttc gca tat gac acc cgc tgt ttt gac tca acg gtc act gag Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu 1825	1830	1835	7321
aat gac atc cgt gtt gag gag tca atc tac caa tgt tgt gac ttg gcc Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala 1845	1850	1855	7369
ccc gaa gcc aga cag gcc ata agg tcg ctc aca gag cgg ctt tac atc Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile 1860	1865	1870	7417
ggg ggc ccc ctg act aat tct aaa ggg cag aac tgc ggc tat cgc cgg Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg 1875	1880	1885	7465
tgc cgc gcg agc ggt gta ctg acg acc agc tgc ggt aat acc ctc aca Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr 1890	1895	1900	7513
tgt tac ttg aag gcc gct gcg gcc tgt cga gct gcg aag ctc cag gac Cys Tyr Leu Lys Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp 1905.	1910	1915	7561
tgc acg atg ctc gta tgc gga gac gac ctt gtc gtt atc tgt gaa agc Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser 1925	1930	1935	7609
gcg ggg acc caa gag gac gag gcg agc cta cgg gcc ttc acg gag gct			7657

Ala Gly Thr Gln Glu Asp Glu Ala Ser Leu Arg Ala Phe Thr Glu Ala			
1940	1945	1950	
atg act aga tac tct gcc ccc cct ggg gac ccg ccc aaa cca gaa tac			7705
Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp Pro Pro Lys Pro Glu Tyr			
1955	1960	1965	
gac ttg gag ttg ata aca tca tgc tcc tcc aat gtg tca gtc gcg cac			7753
Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser Asn Val Ser Val Ala His			
1970	1975	1980	
gat gca tct ggc aaa agg gtg tac tat ctc acc cgt gac ccc acc acc			7801
Asp Ala Ser Gly Lys Arg Val Tyr Tyr Leu Thr Arg Asp Pro Thr Thr			
1985	1990	1995	2000
ccc ctt gcg cgg gct gcg tgg gag aca gct aga cac act cca gtc aat			7849
Pro Leu Ala Arg Ala Ala Trp Glu Thr Ala Arg His Thr Pro Val Asn			
2005	2010	2015	
tcc tgg cta ggc aac atc atc atg tat gcg ccc acc ttg tgg gca agg			7897
Ser Trp Leu Gly Asn Ile Ile Met Tyr Ala Pro Thr Leu Trp Ala Arg			
2020	2025	2030	
atg atc ctg atg act cat ttc ttc tcc atc ctt cta gct cag gaa caa			7945
Met Ile Leu Met Thr His Phe Phe Ser Ile Leu Leu Ala Gln Glu Gln			
2035	2040	2045	
ctt gaa aaa gcc cta gat tgt cag atc tac ggg gcc tgt tac tcc att			7993
Leu Glu Lys Ala Leu Asp Cys Gln Ile Tyr Gly Ala Cys Tyr Ser Ile			
2050	2055	2060	
gag cca ctt gac cta cct cag atc att caa cga ctc cac ggc ctt agc			8041
Glu Pro Leu Asp Leu Pro Gln Ile Ile Gln Arg Leu His Gly Leu Ser			
2065	2070	2075	2080
gca ttt tca ctc cat agt tac tct cca ggt gag atc aat agg gtg gct			8089
Ala Phe Ser Leu His Ser Tyr Ser Pro Gly Glu Ile Asn Arg Val Ala			
2085	2090	2095	
tca tgc ctc agg aaa ctt ggg gta ccg ccc ttg cga gtc tgg aga cat			8137
Ser Cys Leu Arg Lys Leu Gly Val Pro Pro Leu Arg Val Trp Arg His			
2100	2105	2110	
cgg gcc aga agt gtc cgc gct agg cta ctg tcc cag ggg ggg agg gct			8185
Arg Ala Arg Ser Val Arg Ala Arg Leu Leu Ser Gln Gly Gly Arg Ala			
2115	2120	2125	
gcc act tgt ggc aag tac ctc ttc aac tgg gca gta agg acc aag ctc			8233
Ala Thr Cys Gly Lys Tyr Leu Phe Asn Trp Ala Val Arg Thr Lys Leu			
2130	2135	2140	
aaa ctc act cca atc ccg gct gcg tcc cag ttg gat tta tcc agc tgg			8281
Lys Leu Thr Pro Ile Pro Ala Ala Ser Gln Leu Asp Leu Ser Ser Trp			
2145	2150	2155	2160

tcc gtt gct ggt tac agc ggg gga gac ata tat cac agc ctg tct cgt	8329	
Phe Val Ala Gly Tyr Ser Gly Gly Asp Ile Tyr His Ser Leu Ser Arg		
2165	2170	2175
 gcc cga ccc cgc tgg ttc atg tgg tgc cta ctc cta ctt tct gta ggg	8377	
Ala Arg Pro Arg Trp Phe Met Trp Cys Leu Leu Leu Ser Val Gly		
2180	2185	2190
 gta ggc atc tat cta ctc ccc aac cga tga acggggagct aaacactcca	8427	
Val Gly Ile Tyr Leu Leu Pro Asn Arg *		
2195	2200	
 ggccaatagg ccatcctgtt tttttccctt ttttttttcc tttttttttt 8487		
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tcttcacgca gaaagcgtct agccatggcg ttagtatgag tgctgtgcag cctccaggac 120		
ccccccctccc gggagagcca tagtggtctg cggaaccggg gagtacaccg gaattgccag 180		
gacgaccggg tccttcttg gatcaacccg ctcaatgcct ggagatttgg gcgtgcccc 240		
gcgagactgc tagccgagta gtgtgggtc gcgaaaggcc ttgtggtaact gcctgatagg 300		
gtgcttgcga gtgccccggg aggtctcgta gaccgtgcac catgagcacg aatcctaacc 360		
ctcaaagaaa aaccaaagggg cgccatcgat ttgaacaaga tggattgcac gcagggttctc 420		
cggccgctg ggtggagagg ctattcggt atgactgggc acaacagaca atcggctgt 480		
ctgatgccgc cgtgttccgg ctgtcagcgc agggggccccc gttttttt gtcaagaccg 540		
acctgtccgg tgccctgaat gaactgcagg acgaggcagc gcggctatcg tggctggcca 600		
cgacggcggt tccttgcga gctgtgtcg acgttgtcac tgaagcggga agggactggc 660		
tgctattggg cgaagtgcgc gggcaggatc tcctgtcatc tcaccttgcct cctgccgaga 720		
aagtatccat catgctgtat gcaatgcggc ggctgcatac gcttgcattcg gctacactgcc 780		
cattcgacca ccaagcgaaa catcgcatcg agcgagcacf tactggatg gaagccggc 840		
ttgtcgatca ggatgatctg gacgaagagc atcaggggct cgcccgccgc gaactgttgc 900		
ccaggctcaa ggcgcgcatg cccgacggcg aggatctcgat cgtgaccat ggcgatgcct 960		
gcttgcggaa tatcatggtg gaaaatggcc gttttctgg attcatcgac tggccggc 1020		
tgggtgtggc ggaccgctat caggacatag cggtggctac ccgtgatatt gctgaagagc 1080		
ttggccggcga atggcgtac cgcttcctcg tgctttacgg ttcgcgcctt cccgattcgc 1140		
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cagaccacaa cggttccct ctagcggat caattccgccc cccccccta acgttactgg 1260		
ccgaagccgc ttggataaag gccgggtgtc gtttgcatac atgttattttt ccaccatatt 1320		
gccgtctttt ggcaatgtga gggccggaa acctggccct gtcttcttgc cggcattcc 1380		
taggggtctt tccctctcg ccaaaggaat gcaaggctgtt ttgaatgtcg tgaaggaagc 1440		
agttcctctg gaagcttctt gaagacaaac aacgtctgtat gcgaccctt gcaggcagcg 1500		
gaacccccc cctggcgaca ggtgcctctg cggccaaag ccacgtgtat aagatacacc 1560		
tgcaaaggcg gcacaacccc agtgcacgt tttttttttt atagttgtgg aaagagtcaa 1620		
atggctctcc tcaagcgat tcaacaaggg gctgaaggat gcccagaagg taccctattt 1680		

tatggatct gatctgggc ctcggcac atgcttaca tttgttttagt cgaggtaaa	1740
aaacgtctag gccccccgaa ccacgggac gtggtttcc tttgaaaaac acgataatac	1800
c atg gac cgg gag atg gca gca tcg tgc gga ggc gcg gtt ttc gta ggt	1849
Met Asp Arg Glu Met Ala Ala Ser Cys Gly Gly Ala Val Phe Val Gly	
1 5 10 15	
 ctg ata ctc ttg acc ttg tca ccg cac tat aag ctg ttc ctc gct agg	1897
Leu Ile Leu Leu Thr Leu Ser Pro His Tyr Lys Leu Phe Leu Ala Arg	
20 25 30	
 ctc ata tgg tgg tta caa tat ttt atc acc agg gcc gag gca cac ttg	1945
Leu Ile Trp Trp Leu Gln Tyr Phe Ile Thr Arg Ala Glu Ala His Leu	
35 40 45	
 caa gtg tgg atc ccc ccc ctc aac gtt cgg ggg ggc cgc gat gcc gtc	1993
Gln Val Trp Ile Pro Pro Leu Asn Val Arg Gly Gly Arg Asp Ala Val	
50 55 60	
 atc ctc ctc acg tgc gcg atc cac cca gag cta atc ttt acc atc acc	2041
Ile Leu Leu Thr Cys Ala Ile His Pro Glu Leu Ile Phe Thr Ile Thr	
65 70 75 80	
 aaa atc ttg ctc gcc ata ctc ggt cca ctc atg gtg ctc cag gct ggt	2089
Lys Ile Leu Leu Ala Ile Leu Gly Pro Leu Met Val Leu Gln Ala Gly	
85 90 95	
 ata acc aaa gtg ccg tac ttc gtg cgc gca cac ggg ctc att cgt gca	2137
Ile Thr Lys Val Pro Tyr Phe Val Arg Ala His Gly Leu Ile Arg Ala	
100 105 110	
 tgc atg ctg gtg cgg aag gtt gct ggg ggt cat tat gtc caa atg gct	2185
Cys Met Leu Val Arg Lys Val Ala Gly Gly His Tyr Val Gln Met Ala	
115 120 125	
 ctc atg aag ttg gcc gca ctg aca ggt acg tac gtt tat gac cat ctc	2233
Leu Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His Leu	
130 135 140	
 acc cca ctg cgg gac tgg gcc cac gcg ggc cta cga gac ctt gcg gtg	2281
Thr Pro Leu Arg Asp Trp Ala His Ala Gly Leu Arg Asp Leu Ala Val	
145 150 155 160	
 gca gtt gag ccc gtc gtc ttc tct gat atg gag acc aag gtt atc acc	2329
Ala Val Glu Pro Val Val Phe Ser Asp Met Glu Thr Lys Val Ile Thr	
165 170 175	
 tgg ggg gca gac acc gcg gcg tgt ggg gac atc atc ttg ggc ctc ccc	2377
Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Leu Gly Leu Pro	
180 185 190	
 gtc tcc gcc cgc agg ggg agg gag ata cat ctg gga ccg gca gac agc	2425
Val Ser Ala Arg Arg Gly Arg Glu Ile His Leu Gly Pro Ala Asp Ser	
195 200 205	
 ctt gaa ggg cag ggg tgg cga ctc ctc gcg cct att acg gcc tac tcc	2473

Leu	Glu	Gly	Gln	Gly	Trp	Arg	Leu	Leu	Ala	Pro	Ile	Thr	Ala	Tyr	Ser	
210							215					220				
caa	cag	acg	cga	ggc	cta	ctt	ggc	tgc	atc	atc	acc	agc	ctc	aca	ggc	2521
Gln	Gln	Thr	Arg	Gly	Leu	Leu	Gly	Cys	Ile	Ile	Thr	Ser	Leu	Thr	Gly	
225						230					235				240	
cgg	gac	agg	aac	cag	gtc	gag	ggg	gag	gtc	caa	gtg	gtc	tcc	acc	gca	2569
Arg	Asp	Arg	Asn	Gln	Val	Glu	Gly	Glu	Val	Gln	Val	Val	Ser	Thr	Ala	
						245			250				255			
aca	caa	tct	ttc	ctg	gcg	acc	tgc	gtc	aat	ggc	gtg	tgt	tgg	act	gtc	2617
Thr	Gln	Ser	Phe	Leu	Ala	Thr	Cys	Val	Asn	Gly	Val	Cys	Trp	Thr	Val	
						260		265				270				
tat	cat	ggt	gcc	ggc	tca	aag	acc	ctt	gcc	ggc	cca	aag	ggc	cca	atc	2665
Tyr	His	Gly	Ala	Gly	Ser	Lys	Thr	Leu	Ala	Gly	Pro	Lys	Gly	Pro	Ile	
						275		280			285					
acc	caa	atg	tac	acc	aat	gtg	gac	cag	gac	ctc	gtc	ggc	tgg	caa	gcg	2713
Thr	Gln	Met	Tyr	Thr	Asn	Val	Asp	Gln	Asp	Leu	Val	Gly	Trp	Gln	Ala	
						290		295			300					
ccc	ccc	ggg	gcg	cgt	tcc	ttg	aca	cca	tgc	acc	tgc	ggc	agc	tcg	gac	2761
Pro	Pro	Gly	Ala	Arg	Ser	Leu	Thr	Pro	Cys	Thr	Cys	Gly	Ser	Ser	Asp	
						305		310			315			320		
ctt	tac	ttg	gtc	acg	aag	cat	gcc	gat	gtc	att	ccg	gtg	cgc	cgg	cgg	2809
Leu	Tyr	Leu	Val	Thr	Lys	His	Ala	Asp	Val	Ile	Pro	Val	Arg	Arg	Arg	
						325		330			335					
ggc	gac	agc	agg	ggg	agc	cta	ctc	tcc	ccc	cg	ccc	gtc	tcc	tac	ttg	2857
Gly	Asp	Ser	Arg	Gly	Ser	Leu	Leu	Ser	Pro	Arg	Pro	Val	Ser	Tyr	Leu	
						340		345			350					
aag	ggc	tct	tcg	ggc	ggt	cca	ctg	ctc	tgc	ccc	tcg	ggg	cac	gct	gtg	2905
Lys	Gly	Ser	Ser	Gly	Gly	Pro	Leu	Leu	Cys	Pro	Ser	Gly	His	Ala	Val	
						355		360			365					
ggc	atc	ttt	cgg	gct	gcc	gtg	tgc	acc	cga	ggg	gtt	gcf	aag	gcf	gtg	2953
Gly	Ile	Phe	Arg	Ala	Ala	Val	Cys	Thr	Arg	Gly	Val	Ala	Lys	Ala	Val	
						370		375			380					
gac	ttt	gta	ccc	gtc	gag	tct	atg	gaa	acc	act	atg	cg	tcc	ccg	gtc	3001
Asp	Phe	Val	Pro	Val	Glu	Ser	Met	Glu	Thr	Thr	Met	Arg	Ser	Pro	Val	
						385		390			395			400		
ttc	acg	gac	aac	tcg	tcc	cct	ccg	gcc	gta	ccg	cag	aca	ttc	cag	gtg	3049
Phe	Thr	Asp	Asn	Ser	Ser	Pro	Pro	Ala	Val	Pro	Gln	Thr	Phe	Gln	Val	
						405		410			415					
gcc	cat	cta	cac	gcc	cct	act	ggt	agc	ggc	aag	agc	act	aag	gtg	ccg	3097
Ala	His	Leu	His	Ala	Pro	Thr	Gly	Ser	Gly	Lys	Ser	Thr	Lys	Val	Pro	
						420		425			430					

gct gcg tat gca gcc caa ggg tat aag gtg ctt gtc ctg aac ccg tcc		3145	
Ala Ala Tyr Ala Ala Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser			
435	440	445	
gtc gcc acc cta ggt ttc ggg gcg tat atg tct aag gca cat ggt		3193	
Val Ala Ala Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Ala His Gly			
450	455	460	
atc gac cct aac atc aga acc ggg gta agg acc atc acc acg ggt gcc		3241	
Ile Asp Pro Asn Ile Arg Thr Gly Val Arg Thr Ile Thr Thr Gly Ala			
465	470	475	480
ccc atc acg tac tcc acc tat ggc aag ttt ctt gcc gac ggt ggt tgc		3289	
Pro Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly Cys			
485	490	495	
tct ggg ggc gcc tat gac atc ata ata tgt gat gag tgc cac tca act		3337	
Ser Gly Gly Ala Tyr Asp Ile Ile Cys Asp Glu Cys His Ser Thr			
500	505	510	
gac tcg acc act atc ctg ggc atc gca gtc ctg gac caa gcg gag		3385	
Asp Ser Thr Thr Ile Leu Gly Ile Gly Thr Val Leu Asp Gln Ala Glu			
515	520	525	
acg gct gga gcg cga ctc gtc gtg ctc gcc acc gct acg cct ccg gga		3433	
Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr Ala Thr Pro Pro Gly			
530	535	540	
tcg gtc acc gtg cca cat cca aac atc gag gag gtg gct ctg tcc agc		3481	
Ser Val Thr Val Pro His Pro Asn Ile Glu Glu Val Ala Leu Ser Ser			
545	550	555	560
act gga gaa atc ccc ttt tat ggc aaa gcc atc ccc atc gag acc atc		3529	
Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Ile Glu Thr Ile			
565	570	575	
aag ggg ggg agg cac ctc att ttc tgc cat tcc aag aag aaa tgc gat		3577	
Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp			
580	585	590	
gag ctc gcc gcg aag ctg tcc ggc ctc gga ctc aat gct gta gca tat		3625	
Glu Leu Ala Ala Lys Leu Ser Gly Leu Gly Leu Asn Ala Val Ala Tyr			
595	600	605	
tac cgg ggc ctt gat gta tcc gtc ata cca act agc gga gac gtc att		3673	
Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp Val Ile			
610	615	620	
gtc gta gca acg gac gct cta atg acg ggc ttt acc ggc gat ttc gac		3721	
Val Val Ala Thr Asp Ala Leu Met Thr Gly Phe Thr Gly Asp Phe Asp			
625	630	635	640
tca gtg atc gac tgc aat aca tgt gtc acc cag aca gtc gac ttc agc		3769	
Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser			
645	650	655	

ctg gac ccg acc ttc acc att gag acg acg acc gtg cca caa gac gcg		3817	
Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Thr Val Pro Gln Asp Ala			
660	665	670	
gtg tca cgc tcg cag cgg cga ggc agg act ggt agg ggc agg atg ggc		3865	
Val Ser Arg Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Met Gly			
675	680	685	
att tac agg ttt gtg act cca gga gaa cgg ccc tcg ggc atg ttc gat		3913	
Ile Tyr Arg Phe Val Thr Pro Gly Glu Arg Pro Ser Gly Met Phe Asp			
690	695	700	
tcc tcg gtt ctg tgc gag tgc tat gac gcg ggc tgt gct tgg tac gag		3961	
Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu			
705	710	715	720
ctc acg ccc gcc gag acc tca gtt agg ttg cgg gct tac cta aac aca		4009	
Leu Thr Pro Ala Glu Thr Ser Val Arg Leu Arg Ala Tyr Leu Asn Thr			
725	730	735	
cca ggg ttg ccc gtc tgc cag gac cat ctg gag ttc tgg gag ggc gtc		4057	
Pro Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Gly Val			
740	745	750	
ttt aca ggc ctc acc cac ata gac gcc cat ttc ttg tcc cag act aag		4105	
Phe Thr Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys			
755	760	765	
cag gca gga gac aac ttc ccc tac ctg gta gca tac cag gct acg gtc		4153	
Gln Ala Gly Asp Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val			
770	775	780	
tgc gcc agg gct cag gct cca cct cca tcg tgg gac caa atg tgg aag		4201	
Cys Ala Arg Ala Gln Ala Pro Pro Pro Ser Trp Asp Gln Met Trp Lys			
785	790	795	800
tgt ctc ata cgg cta aag cct acg ctg cac ggg cca acg ccc ctg ctg		4249	
Cys Leu Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu			
805	810	815	
tat agg ctg gga gcc gtt caa aac gag gtt act acc aca cac ccc ata		4297	
Tyr Arg Leu Gly Ala Val Gln Asn Glu Val Thr Thr His Pro Ile			
820	825	830	
acc aaa tac atc atg gca tgc atg tcg gct gac ctg gag gtc gtc acg		4345	
Thr Lys Tyr Ile Met Ala Cys Met Ser Ala Asp Leu Glu Val Val Thr			
835	840	845	
agc acc tgg gtg ctg gta ggc gga gtc cta gca gct ctg gct gcg tat		4393	
Ser Thr Trp Val Leu Val Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr			
850	855	860	
tgc ctg aca aca ggc agc gtg gtc att gtg ggc agg atc atc ttg tcc		4441	
Cys Leu Thr Thr Gly Ser Val Val Ile Val Gly Arg Ile Ile Leu Ser			

865	870	875	880	
gga agg ccg gcc atc att ccc gac agg gaa gtc ctt tac cg <sup>g</sup> gag ttc Gly Arg Pro Ala Ile Ile Pro Asp Arg Glu Val Leu Tyr Arg Glu Phe 885		890		895
gat gag atg gaa gag tgc gcc tca cac ctc cct tac atc gaa cag gga Asp Glu Met Glu Glu Cys Ala Ser His Leu Pro Tyr Ile Glu Gln Gly 900	905		910	4537
atg cag ctc gcc gaa caa ttc aaa cag aag gca atc ggg ttg ctg caa Met Gln Leu Ala Glu Gln Phe Lys Gln Lys Ala Ile Gly Leu Leu Gln 915	920		925	4585
aca gcc acc aag caa gcg gag gct gct ccc gtg gtg gaa tcc aag Thr Ala Thr Lys Gln Ala Glu Ala Ala Pro Val Val Glu Ser Lys 930	935	940		4633
tgg cgg acc ctc gaa gcc ttc tgg gcg aag cat atg tgg aat ttc atc Trp Arg Thr Leu Glu Ala Phe Trp Ala Lys His Met Trp Asn Phe Ile 945	950	955		4681
agc ggg ata caa tat tta gca ggc ttg tcc act ctg cct ggc aac ccc Ser Gly Ile Gln Tyr Leu Ala Gly Leu Ser Thr Leu Pro Gly Asn Pro 965		970		4729
gcg ata gca tca ctg atg gca ttc aca gcc tct atc acc agc ccg ctc Ala Ile Ala Ser Leu Met Ala Phe Thr Ala Ser Ile Thr Ser Pro Leu 980	985		990	4777
acc acc caa cat acc ctc ctg ttt aac atc ctg ggg gga tgg gtg gcc Thr Thr Gln His Thr Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Ala 995	1000		1005	4825
gcc caa ctt gct cct ccc agc gct tcc gct ttc gta ggc gcc ggc Ala Gln Leu Ala Pro Pro Ser Ala Ala Ser Ala Phe Val Gly Ala Gly 1010	1015	1020		4873
atc gct gga gcg gct gtt ggc agc ata ggc ctt ggg aag gtg ctt gtg Ile Ala Gly Ala Ala Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val 1025	1030	1035		4921
gat att ttg gca ggt tat gga gca ggg gtg gca ggc gcg ctc gtg gcc Asp Ile Leu Ala Gly Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala 1045		1050		4969
ttt aag gtc atg agc ggc gag atg ccc tcc acc gag gac ctg gtt aac Phe Lys Val Met Ser Gly Glu Met Pro Ser Thr Glu Asp Leu Val Asn 1060	1065		1070	5017
cta ctc cct gct atc ctc tcc cct ggc gcc cta gtc gtc ggg gtc gtg Leu Leu Pro Ala Ile Leu Ser Pro Gly Ala Leu Val Val Gly Val Val 1075	1080		1085	5065
tgc gca gcg ata ctg cgt cgg cac gtg ggc cca ggg gag ggg gct gtg				5113

Cys Ala Ala Ile Leu Arg Arg His Val Gly Pro Gly Glu Gly Ala Val			
1090	1095	1100	
cag tgg atg aac cgg ctg ata gcg ttc gct tcg cgg ggt aac cac gtc	5161		
Gln Trp Met Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val			
1105	1110	1115	1120
tcc ccc acg cac tat gtg cct gag agc gac gct gca gca cgt gtc act	5209		
Ser Pro Thr His Tyr Val Pro Glu Ser Asp Ala Ala Arg Val Thr			
1125	1130	1135	
cag atc ctc tct agt ctt acc atc act cag ctg ctg aag agg ctt cac	5257		
Gln Ile Leu Ser Ser Leu Thr Ile Thr Gln Leu Leu Lys Arg Leu His			
1140	1145	1150	
cag tgg atc aac gag gac tgc tcc acg cca tgc tcc ggc tcg tgg cta	5305		
Gln Trp Ile Asn Glu Asp Cys Ser Thr Pro Cys Ser Gly Ser Trp Leu			
1155	1160	1165	
aga gat gtt tgg gat tgg ata tgc acg gtg ttg act gat ttc aag gcc	5353		
Arg Asp Val Trp Asp Trp Ile Cys Thr Val Leu Thr Asp Phe Lys Ala			
1170	1175	1180	
tgg ctc cag tcc aag ctc ctg ccg cga ttg ccg gga gtc ccc ttc ttc	5401		
Trp Leu Gln Ser Lys Leu Leu Pro Arg Leu Pro Gly Val Pro Phe Phe			
1185	1190	1195	1200
tca tgt caa cgt ggg tac aag gga gtc tgg ccg ggc gac ggc atc atg	5449		
Ser Cys Gln Arg Gly Tyr Lys Gly Val Trp Arg Gly Asp Gly Ile Met			
1205	1210	1215	
caa acc acc tgc cca tgt gga gca cag atc acc gga cat gtg aaa aac	5497		
Gln Thr Thr Cys Pro Cys Gly Ala Gln Ile Thr Gly His Val Lys Asn			
1220	1225	1230	
tgt tcc atg agg atc gtg ggg cct agg acc tgt agt aac acg tgg cat	5545		
Cys Ser Met Arg Ile Val Gly Pro Arg Thr Cys Ser Asn Thr Trp His			
1235	1240	1245	
gga aca ttc ccc att aac gcg tac acc acg ggc ccc tgc acg ccc tcc	5593		
Gly Thr Phe Pro Ile Asn Ala Tyr Thr Thr Gly Pro Cys Thr Pro Ser			
1250	1255	1260	
ccg gcg cca aat tat tct agg gcg ctg tgg ccg gtg gct gct gag gag	5641		
Pro Ala Pro Asn Tyr Ser Arg Ala Leu Trp Arg Val Ala Ala Glu Glu			
1265	1270	1275	1280
tac gtg gag gtt acg cga gtg ggg gat ttc cac tac gtg acg ggc atg	5689		
Tyr Val Glu Val Thr Arg Val Gly Asp Phe His Tyr Val Thr Gly Met			
1285	1290	1295	
acc act gac aac gta aag tgc ccg tgt cag gtt ccg gcc ccc gaa ttc	5737		
Thr Thr Asp Asn Val Lys Cys Pro Cys Gln Val Pro Ala Pro Glu Phe			
1300	1305	1310	

ttc aca gaa gtg gat ggg gtg cggttgcacagg tac gct cca gcg tgc Phe Thr Glu Val Asp Gly Val Arg Leu His Arg Tyr Ala Pro Ala Cys 1315 1320 1325	5785
aaa ccc ctc cta cgg gag gag gtc aca ttccctggctc aat caa Lys Pro Leu Leu Arg Glu Glu Val Thr Phe Leu Val Gly Leu Asn Gln 1330 1335 1340	5833
tac ccg gtt ggg tca cag ctc cca tgc gag ccc gaa ctg gac gta gca Tyr Pro Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Leu Asp Val Ala 1345 1350 1355 1360	5881
gtg ctc act tcc atg ctc acc gac ccc tcc cac att acg gcg gag acg Val Leu Thr Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr 1365 1370 1375	5929
gct aag cgt agg ctg gcc agg gga tct ccc ccc tcc ttg gcc agc tca Ala Lys Arg Arg Leu Ala Arg Gly Ser Pro Pro Ser Leu Ala Ser Ser 1380 1385 1390	5977
tca gct agc cag ctg tct gcgccttcc ttg aag gca aca tgc act acc Ser Ala Ser Gln Leu Ser Ala Pro Ser Leu Lys Ala Thr Cys Thr Thr 1395 1400 1405	6025
cgt cat gac tcc ccg gac gct gac ctc atc gag gcc aac ctc ctg tgg Arg His Asp Ser Pro Asp Ala Asp Leu Ile Glu Ala Asn Leu Leu Trp 1410 1415 1420	6073
cgg cag gag atg ggc ggg aac atc acc cgc gtg gag tca gag aat aag Arg Gln Glu Met Gly Gly Asn Ile Thr Arg Val Glu Ser Glu Asn Lys 1425 1430 1435 1440	6121
gta gta att ttg gac tct ttc gag ccgcctcaa gcggag gat gag Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp Glu 1445 1450 1455	6169
agg gaa gta tcc gtt ccg gcg gag atc ctgcggagg tcc agg aaa ttc Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe 1460 1465 1470	6217
cct cga gcg atg ccc ata tgg gca cgc ccg gat tac aac cct cca ctg Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro Leu 1475 1480 1485	6265
tta gag tcc tgg aag gac ccg gac tac gtc cct cca gtg gta cac ggg Leu Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His Gly 1490 1495 1500	6313
tgt cca ttg ccgcctgcc aag gcc cct ccg ata cca cct cca ccggagg Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Ile Pro Pro Pro Arg Arg 1505 1510 1515 1520	6361
aag agg acg gtt gtc ctg tca gaa tct acc gtg tct tct gcc ttggcg Lys Arg Thr Val Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu Ala 1525 1530 1535	6409

gag ctc gcc aca aag acc ttc ggc agc tcc gaa tcg tcg gcc gtc gac		6457
Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val Asp		
1540	1545	1550
agc ggc acg gca acg gcc tct cct gac cag ccc tcc gac gac ggc gac		6505
Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly Asp		
1555	1560	1565
gcg gga tcc gac gtt gag tcg tac tcc atg ccc ccc ctt gag ggg		6553
Ala Gly Ser Asp Val Glu Ser Tyr Ser Ser Met Pro Pro Leu Glu Gly		
1570	1575	1580
gag ccg ggg gat ccc gat ctc agc gac ggg tct tgg tct acc gta agc		6601
Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Ser Trp Ser Thr Val Ser		
1585	1590	1595
gag gag gct agt gag gac gtc gtc tgc tcg atg tcc tac aca tgg		6649
Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr Trp		
1605	1610	1615
aca ggc gcc ctg atc acg cca tgc gct gcg gag gaa acc aag ctg ccc		6697
Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu Pro		
1620	1625	1630
atc aat gca ctg agc aac tct ttg ctc cgt cac cac aac ttg gtc tat		6745
Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val Tyr		
1635	1640	1645
gct aca aca tct cgc agc gca agc ctg cgg cag aag aag gtc acc ttt		6793
Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr Phe		
1650	1655	1660
gac aga ctg cag gtc ctg gac gac cac tac cgg gac gtg ctc aag gag		6841
Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu		
1665	1670	1675
atg aag gcg aag gcg tcc aca gtt aag gct aaa ctt cta tcc gtg gag		6889
Met Lys Ala Lys Ala Ser Thr Val Lys Ala Lys Leu Leu Ser Val Glu		
1685	1690	1695
gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt ggc		6937
Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly		
1700	1705	1710
tat ggg gca aag gac gtc cgg aac cta tcc agc aag gcc gtt aac cac		6985
Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His		
1715	1720	1725
atc cgc tcc gtg tgg aag gac ttg ctg gaa gac act gag aca cca att		7033
Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro Ile		
1730	1735	1740
gac acc acc atc atg gca aaa aat gag gtt ttc tgc gtc caa cca gag		7081
Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu		

1745	1750	1755	1760	
aag ggg ggc cgc aag cca gct cgc ctt atc gta ttc cca gat ttg ggg Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu Gly 1765		1770	1775	7129
gtt cgt gtg tgc gag aaa atg gcc ctt tac gat gtg gtc tcc acc ctc Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu 1780	1785		1790	7177
cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct gga Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly 1795	1800	1805		7225
cag cgg gtc gag ttc ctg gtg aat gcc tgg aaa gcg aag aaa tgc cct Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro 1810	1815	1820		7273
atg ggc ttc gca tat gac acc cgc tgt ttt gac tca acg gtc act gag Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu 1825	1830	1835	1840	7321
aat gac atc cgt gtt gag gag tca atc tac caa tgt tgt gac ttg gcc Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala 1845	1850		1855	7369
ccc gaa gcc aga cag gcc ata agg tcg ctc aca gag cgg ctt tac atc Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile 1860	1865	1870		7417
ggg ggc ccc ctg act aat tct aaa ggg cag aac tgc ggc tat cgc cgg Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg 1875	1880	1885		7465
tgc cgc gcg agc ggt gta ctg acg acc agc tgc ggt aat acc ctc aca Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr 1890	1895	1900		7513
tgt tac ttg aag gcc gct gcg gcc tgt cga gct gcg aag ctc cag gac Cys Tyr Leu Lys Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp 1905	1910	1915	1920	7561
tgc acg atg ctc gta tgc gga gac gac ctt gtc gtt atc tgt gaa agc Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser 1925	1930		1935	7609
gcg ggg acc caa gag gac gag gcg agc cta cggt gcc ttc acg gag gct Ala Gly Thr Gln Glu Asp Glu Ala Ser Leu Arg Ala Phe Thr Glu Ala 1940	1945	1950		7657
atg act aga tac tct gcc ccc cct ggg gac ccg ccc aaa cca gaa tac Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp Pro Pro Lys Pro Glu Tyr 1955	1960	1965		7705
gac ttg gag ttg ata aca tca tgc tcc aat gtg tca gtc gcg cac				7753

Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser Asn Val Ser Val Ala His			
1970	1975	1980	
gat gca tct ggc aaa agg gtg tac tat ctc acc cgt gac ccc acc acc 7801			
Asp Ala Ser Gly Lys Arg Val Tyr Tyr Leu Thr Arg Asp Pro Thr Thr			
1985	1990	1995	2000
ccc ctt gcg cgg gct gcg tgg gag aca gct aga cac act cca gtc aat 7849			
Pro Leu Ala Arg Ala Ala Trp Glu Thr Ala Arg His Thr Pro Val Asn			
2005	2010	2015	
tcc tgg cta ggc aac atc atc atg tat gcg ccc acc ttg tgg gca agg 7897			
Ser Trp Leu Gly Asn Ile Ile Met Tyr Ala Pro Thr Leu Trp Ala Arg			
2020	2025	2030	
atg atc ctg atg act cat ttc ttc atc ctt cta gct cag gaa caa 7945			
Met Ile Leu Met Thr His Phe Phe Ser Ile Leu Leu Ala Gln Glu Gln			
2035	2040	2045	
ctt gaa aaa gcc cta gat tgt cag atc tac ggg gcc tgt tac tcc att 7993			
Leu Glu Lys Ala Leu Asp Cys Gln Ile Tyr Gly Ala Cys Tyr Ser Ile			
2050	2055	2060	
gag cca ctt gac cta cct cag atc att caa cga ctc cac ggc ctt agc 8041			
Glu Pro Leu Asp Leu Pro Gln Ile Ile Gln Arg Leu His Gly Leu Ser			
2065	2070	2075	2080
gca ttt tca ctc cat agt tac tct cca ggt gag atc aat agg gtg gct 8089			
Ala Phe Ser Leu His Ser Tyr Ser Pro Gly Glu Ile Asn Arg Val Ala			
2085	2090	2095	
tca tgc ctc agg aaa ctt ggg gta ccg ccc ttg cga gtc tgg aga cat 8137			
Ser Cys Leu Arg Lys Leu Gly Val Pro Pro Leu Arg Val Trp Arg His			
2100	2105	2110	
cg <sup>g</sup> gcc aga agt gtc cgc gct agg cta ctg tcc cag ggg ggg agg gct 8185			
Arg Ala Arg Ser Val Arg Ala Arg Leu Leu Ser Gln Gly Gly Arg Ala			
2115	2120	2125	
gcc act tgt ggc aag tac ctc aac tgg gca gta agg acc aag ctc 8233			
Ala Thr Cys Gly Lys Tyr Leu Phe Asn Trp Ala Val Arg Thr Lys Leu			
2130	2135	2140	
aaa ctc act cca atc ccg gct gcg tcc cag ttg gat tta tcc agc tgg 8281			
Lys Leu Thr Pro Ile Pro Ala Ala Ser Gln Leu Asp Leu Ser Ser Trp			
2145	2150	2155	2160
ttc gtt gct ggt tac agc ggg gga gac ata tat cac agc ctg tct cgt 8329			
Phe Val Ala Gly Tyr Ser Gly Gly Asp Ile Tyr His Ser Leu Ser Arg			
2165	2170	2175	
gcc cga ccc cgc tgg ttc atg tgg tgc cta ctc cta ctt tct gta ggg 8377			
Ala Arg Pro Arg Trp Phe Met Trp Cys Leu Leu Leu Ser Val Gly			
2180	2185	2190	

gta ggc atc tat cta ctc ccc aac cga tga acggggagct aaacactcca 8427  
Val Gly Ile Tyr Leu Leu Pro Asn Arg \*  
2195 2200

ggccaatagg ccatcctgtt tttttccctt tttttttttt tttttttttt 8487  
ttttttttt ttttctcctt tttttttccct cttttttcc ttttcttcc tttgggtggct 8547  
ccatcttagc cctagtcacg gctagctgtg aaaggtccgt gagccgcttg actgcagaga 8607  
gtgctgatac tggcctctct gcagatcaag t 8638